

2. Phillyrea; latifolia; lævis. C. B. P. 476. *Phillyrea, Mahaleb Serapionis*. Lugd. 154.

3. Phillyrea; latifolia; spinosa. C. B. P. 416. *Phillyrea, folio Ilicis*. J. B. 1. 541.

4. Phillyrea; latifolia; spinosa. C. B. P. *Longiori folio Alaterni*. Ind. 248.

5. Phillyrea; folio leviter serrato. C. B. P. 476.

6. Phillyrea; folio magis serrato, subrotundiori. Ind. 248.

7. Phillyrea; folio Ligustri. C. B. P. 476. *Tourn. Inst.* 596. *Boerb. Ind. a. 2.* 215. *Phillyrea*. Offic. *Phillyrea latifolia folio*. J. B. 1. 539. *Raii Hist.* 2. 1585. *Phillyrea latiore folio*. Ger. 1209. *Emac.* 1395. *Phillyrea latifolia foliis fere non serratis*. Park. *Theat.* 1443. **MOCK PRIVET.**

The Leaves are drying and astringent, and are very much commended for Ulcers in the Mouth. *Dale*.

8. Phillyrea; angustifolia; prima. C. B. P. 476. *Boerb. Ind. alt. Plant. Vol. 2.*

Many confound the *Phillyrea* of *Dioscorides* with the *Philyra* of *Theophrastus*; others, rightly in my Opinion, distinguish them. *J. Bauhine* proves the *Mahaleb* of the *Arabians* to be the *Phillyrea* of *Dioscorides*. But whether the *Mahaleb*, or *Phillyrea*, be the same Tree which is now commonly known by that Name, is a Question. *Rauwolfius* writes, that he saw at *Aleppo*, in the Spicery-shops, small white Seeds, which they call *Mahaleb*, surrounded with an hard Cortex, somewhat long, and acuminate, and cover'd with a thin Membrane, after the manner of Pistaches; these Seeds they use in the Composition of their sweet-scented Soap. And the Monks who have commented on *Mesue*, write that *Mahaleb* is a very common Shrub in *Syria*, thorny, and with Leaves like the Olive-tree; that it bears Fruit in Clusters on the Branches, like the Lentisk, but somewhat bigger; from whence the *Syrians* express a very fragrant Oil, of which they prepare their sweet-scented Soaps, and several other Things. But how all this can agree with the common *Phillyrea*, says *Ray*, I am at a Loss to understand.

The Leaves of the *Phillyrea*, according to *Dioscorides*, are astringent, like those of the wild Olive-tree; and are therefore proper in those Cases, which require Astringent. Being chewed in the Mouth, they are very good for Ulcers therein; and a Collution of the Mouth with the Decoction has the same Effect. The Decoction drank provokes Urine, and the Menstrues. What the *Arabians* write of the Virtues of the *Mahaleb*, which *J. Bauhine* supposes to be the *Phillyrea* of *Dioscorides*, may be found in *Bauhine*. At present the *Phillyrea* is not used in Medicine, but, on account of its evergreen Leaves, is of good Ornament in Gardens, being disposed in cleft Hedges, Plots of Evergreen, and by the Sides of Walks. *Raii H. P.*

PHILOCHYMICUS. A Lover of Chymistry.

PHILOCOTYCHE. The Name of a Plaster, in *Myrepsus*, *Cap.* 136.

PHILOCRATIS Emplastrum. A Plaster described by *Celsus*, *Lib. 5. Cap.* 19.

PHILOLAGNOS, φιλόλαγνος, in *Hippocrates de R. V. I. A.* means one addicted to Venery.

PHILOLUTROS, φιλόλυτρος, from φίλος, a Friend, and λύτρον, a Bath. A Lover of Bathing. *Hippocrates de R. V. I. A.*

PHILOMEDICA. The Name of a Potion, prescribed in burning Fevers, for allaying the Thirst; and described in *Collectedan. Chymic. Leidenf. Cap.* 332.

PHILOMELA, the Nightingale. See **LUSCINIA**.

PHILONIUM. A kind of somniferous, anodyne Opiate; taking its Name from *Philo*, the Inventor. *Galen, de C. M. S. L. Lib. 9. Cap. 4.* says, that the Antidote of *Philo*, or *Philonium*, was in great Reputation for a long time past; and that this Medicine was one of the first and most ancient of its Kind. By Medicines of this Kind, we can understand no other than Antidotes, such as *Mithridate*, *Theriaca*, *Hiera*, and the like. I do not believe this Composition of *Philo* to be quite so ancient as *Mithridate*; but it was, doubtless, coeval with the simple *Hiera*, invented by *Themison*, who lived under the Reign of *Augustus*. The *Theriaca* was of later Invention, and not begun to be composed till the Time of *Nero*. What makes me think, that *Philonium* was somewhat later than *Mithridate*, is, that, among the Virtues which *Philo* ascribes to his Composition, he says, it is proper for the Colic. Now this Disease was not known by that Name, long before the Reign of *Tiberius*. I imagine then, that *Philo* lived under *Augustus*, near about the Time of *Themison*, and the first Disciples of *Asclepiades*. *Galen* may, however, speak of the *Philonium*, as an ancient Medicine, because he did not write till about two hundred Years after the Time in which I suppose it to be invented.

Philo wrote it in *Greek Elegiacs*, and after an enigmatic Manner; so that it required to be well versed in Mythology, or Fable, to be able to conjecture at his Meaning. "Take, says he, red and odorous Hairs of the Youth whose Blood is still fresh in the Fields of *Mercury*; as many Drams as we have of Senses [five]; of *Euboic Nauplium*, one Dram; as much of the Killer of the Son of *Menæchmus*, as is contained within the Bellies of the Ewes. Add thereto twenty Drams of white Flame, and the same Weight of Beans of the *Arcadian Swine*; with one Dram

of the Plant falsely call'd a Root, and which comes from the Country celebrated on account of *Jupiter Pisseus*. Write *Philonium*, and; to the Head of that Word, add the masculine Article of the *Greeks*. Take ten Drams of this last Ingredient, and carefully mix the Whole with the Works of the Daughters of the Bull of *Athens*." You may see, in *Galen*, an explication of this Jargon, which amounts to this: Take of *Saffron*, *Pyrethrum*, white *Pepper*, *Henbane*, *Spikenard*, and *Opium*, the Weight assign'd to each Ingredient; and incorporate the Whole with *Attic Honey*. Not only *Galen*, but *Aretæus*, *P. Ægineta*, *Aetius*, *Oribasius*, and other Authors, mention this Medicine, which is still common at this Day. *Celsus*, also, quotes *Philo*, but it is only for a Collyrium, and says nothing of his Antidote; tho' it is probable, that it was this *Philo* of *Tarsus*, from whom he borrow'd that Collyrium. *Le Clerc Hist. de la Medecine*.

Philonium Persicum is thus prepared. Take of white *Pepper*, and white *Henbane*, each ten Drams; of *Opium*, *Terar Sigillata*, each five Drams; *Lapis Hæmatites*, *Saffron*, each two Drams and an half; *Castor*, *Indian Spikenard*, *Pyrethrum*, *Pearls*, *Amber*, *Zedoary*, *Doronicum*, or else *Elecampane*, *Troches of Ramich*, each half a Dram; *Camphire*, a Scruple; *Honey of Roses*, fifteen Ounces. Mix them together for an Opiate.

The Roots, the Seeds, the *Castor*, the *Spikenard*, the *Saffron*, and the *Troches of Ramich*, are to be reduced to a Powder together. Then the Seal'd Earth, and the *Camphire*, are to be pounded together; and the *Blood-stone*, the *Pearls*, and the *Amber*, are to be levigated on a Marble, till they are reduced to an impalpable Powder. The *Opium* must be of the best Kind, and cut down into small Portions; after which, it is to be beat in a brazen Mortar, with a little *Honey of Roses*, till it is reduced to a kind of liquid Paste. Then boil *Honey of Roses* to the Consistence of a thick Syrup; with fifteen Ounces of which intimately mix the *Opium*, and the Powders, for an Opiate, to be kept for Use in a close-stopt Vessel.

This Preparation is proper for stopping *Hæmorrhages* and *Fluxes*; as, also, for preventing *Abortion*. The Dose of it is from one Scruple to one Dram.

A Scruple of this Opiate contains Two-thirds of a Grain of *Opium*; and One-third of a Grain of the Seeds of white *Henbane*.

Half a Dram of the Opiate contains a Grain and half a quarter of a Grain of *Opium*, and two Grains and an half of the white *Henbane-seeds*.

Two Scruples of the Opiate contain a Grain and an half of *Opium*, and three Grains of the *Henbane-seeds*.

One Dram of the Opiate contains two Grains and a quarter of a Grain of *Opium*, and four Grains and an half of the *Henbane-seeds*.

The *Philonium Romanum* is thus prepared.

Take of white *Pepper*, and white *Henbane-seeds*, each five Drams; *Opium*, two Drams and an half; *Cassia-bark*, one Dram and an half; *Smallage-seed*, one Dram; the Seeds of *Macedonian Parsley*, *Fennel*, and *Candy Carrots*, each two Scruples five Grains; *Saffron*, one Scruple and an half; *Spikenard*, *Pellitory of Spain*, and *Zedoary*, each fifteen Grains; *Cinnamon*, a Dram and an half; *Myrrh* and *Castor*, each a Dram; *Syrup of white Poppies*, a sufficient Quantity, to make the Whole into an Electuary.

This is a Prescription, originally, of *Nicolaus Myrepsus*; but the first Dispensatory of the College received it with *Euphorbium*, as does the *Augustan*, which the College has now rejected, it being an Ingredient too hot, and irritating, for inward Use. There are several other Compositions of this Denomination taken by the Dispensatory-writers from *Mesue*, *Galen*, and others; but they all nearly agree. *Zwelfer*, however, prefers the *Confectio Archigenis* to them all, as a warm Opiate, which is their main Intention. The former Prescriptions of this were all with *Honey*, in three times the Quantity of the other Ingredients; but the *Syrupus de Meconio*, as here ordered, is vastly preferable, as agreeing so much better with the Intention of the Whole. It is a powerful Opiate, and given from ten Grains to two Scruples, to ease violent Pains, and procure Sleep. *Quincy*. But, perhaps, this Medicine, and all of this Class, may be much better, if prepar'd with *Honey*.

PHILOPARABOLOS, φιλοπαράβολος. An Epithet, apply'd by *Asclepiades* to one of the two Methods used by him in the Cure of a Phrensy, and signifying violent and dangerous, in Opposition to his other Method, which was safer, or, in the Language of *Cælius Aurelianus*, non meticulosus, and proper for most Patients. This dangerous and violent Method (for that Reason called *Philoparabolos*, which is used, by *Plutarch*, to signify one who desperately throws himself into the midst of Dangers) consisted in exhibiting, at the first Visit, a large Draught of pure or undiluted Wine, mix'd with Sea-water; for, says *Asclepiades*, giving a Reason for this Practice, all those Helps and Benefits which accrue to the Sick, in a weak and slow Manner, from the Use of Mulsim, and forbile Liquors, are much more readily and plentifully procured by Wine; for the Exhibition thereof is succeeded by a vast Pervor, with a Lowering of the Pulse, and a Repression of the colliquative Sweats, the Wine performing the Office of an univer-

universal Cautery. *Cælius Aurelianus, Acut. Morb. Lib. I. Cap. 15.*

PHILOXENIAS ANTIDOTUS. The Name of an Antidote, described by *Nicolaus Myrepsus, Sect. 1. C. 239.*

PHILTRON, φίλτρον. A Love Potion, or Medicine to excite Love. It, also, imports that Cavity, or Depressure, in the upper Lip, which is situated immediately under the *Septum* of the Nose.

PHILUMENI MEDICAMENTUM. The Name of a Medicine for the Eyes, described by *Oribasius, Collect. Medicinal. L. 8. C. 45.*

PHILYPOSTROPHA, φιλυπώστροφα. Whatever cause, or threaten, a Relapse, are thus call'd by *Hippocrates, Prorrh. et Coac. Prænot.*

PHIMOSIS. Sometimes the Præputium, or Foreskin, is so contracted by a violent Inflammation, that it cannot be drawn backward behind the Glans. This Disorder is call'd *Phimosis* by the *Greeks*, and produces many dangerous Consequences; especially if a virulent Venereal Matter be lodged between the Glans and the Skin; for, by the Contraction of the Skin, those little Ulcers of the Glans, called *Chancres*, which proceed from impure Copulation, cannot be conveniently cleansed or healed. Nor is it surprising, as *Verdus* observed, that a Gangrene, or Cancer, or, at least, a violent Inflammation of the Glans and Foreskin should arise from this Cause; and, upon account of these Mischiefs, the Penis must either be consumed by the Ulcers, or removed by the Knife. The Patient, generally, cannot void his Urine without extreme Pain, because of the Corrosion of the Skin and Glans. The general Cause of a *Phimosis* is, by Physicians, rightly ascribed to impure Coition. For whilst the virulent Matter, which had been lodged in the Sinuses of the Vagina, continues between the Skin and Glans, the Foreskin, especially if it should be naturally long, or tight, can hardly escape being swell'd with an Inflammation, and a *Phimosis* must be induced. Some, however, have the Foreskin naturally so long, and so straiten'd, that the Glans can either be not at all, or very little uncover'd; but as this neither occasions Trouble in discharging the Urine, nor any Impediment in Procreation, it requires no Aid from the Surgeons, unless it be attended with an Inflammation, violent Pain, or any remarkable Inconvenience in Coition. Those who have their Foreskin naturally very long, are much more easily infected by impure Embraces, than others, as we learn both from Reason and Experience.

If this Disorder is occasion'd by no Venereal Taint, it is cured by bathing the Penis, a sufficient Time, in warm Water: But, if it proceeds from a Venereal Infection, proper internal Medicines must be exhibited; and the Pain may be alleviated, and the Ulcers heal'd, by the following Method. In order to wash out the acrimonious morbid Humours lodged under the Skin, let warm Water, or rather, a Decoction of Barley, mix'd with Honey of Roses, be frequently injected with a Syringe, between the Skin and the Glans. To discuss the Tumor, apply, externally, an emollient and digestive Fomentation, or Cataplasm, round the tumefied Part of the Penis; and, if the Inflammation be severe, Bleeding should not be omitted. After these Measures are duly taken, we may endeavour to draw back the Prepuce. But if the Tumor, and violent Exulceration, of the Glans render this Attempt impracticable, if the Disorder increases, or, lastly, if the Prepuce was naturally long, and could not be drawn back before the Infection, Recourse must be had to the Knife.

In this Case, there are two Methods of Operation. 1. Let the End of the Prepuce be drawn as far forwards as possible, and let an Assistant hold the cover'd Glans in his Fingers. Let the Operator, with his Left Thumb, press back the Glans cover'd with the Skin, and then, with a Knife, or Scissars, let him extirpate all that Part of the Skin which projects beyond his Thumb, much in the same manner with the *Jewish* Circumcision. Thus may the most straiten'd Part of the Skin be easily drawn back; and the Glans being uncover'd, the Ulcer may more expeditiously be cleansed and heal'd.

2. The other Method is thus perform'd. The superior Part of the Prepuce must be drawn up by the Fingers, and a Pair of Probe-scissars introduced; then an Incision must be made so far in the contracted Skin, as may be sufficient for uncovering the Glans. *Guillemeau, Palfyn*, and others, prefer a particular Knife for this Use, represented *Tab. XLVII. Fig. 4.* But why this Knife should be crooked, or why a straight Knife may not as well serve the Purpose, I cannot understand. After this longitudinal Incision, some Surgeons cut off, with the Scissars, as much of the End of the Prepuce, as appears superfluous. A copious Discharge of Blood succeeds this Operation; nor should it be suddenly stopped, but rather suffer'd to flow, as long as the Strength of the Patient will permit, in order to prevent an Inflammation. Then dress with dry Lint, and apply a proper Compress and Bandage; and proceed, afterwards, as in the Cure of other Wounds. Besides the Cautions to be observed in the first Method of Cure, particular Care must be taken, that, in healing the Wound, the Extremity of the Prepuce be not too much contracted; by which means the Patient would be again exposed to the same Disorder. Sometimes, by dividing the Prepuce, the Glans is drawn back by the Frenum, and the Penis be-

comes incurvated; in which Case, the Frenum must be cut with the Knife, or Scissars. If a Gangrene affects the Glans, as in an Instance related by *Verdus*, it is necessary to penetrate to the sound Parts by frequent Scarification, and to apply a Fomentation of *Unguentum Ægyptiacum*, and Treacle, dissolved in camphorated Spirit of Wine, till the Gangrene disappears. But the stubborn Ulcers, or Chancres, can scarcely be removed without the Use of internal mercurial Medicines; and, sometimes, not without a slight Salivation. Nor must I omit to mention an Instrument contrived by my Friend, Dr. *Trew*, for this Purpose, and represented in *Tab. XLVII. Fig. 5.* whose Plates A A, being introduced under the Skin, and gradually distended by the Screw B, they, by their Elasticity, gently dilate the contracted Skin; and thus may the Glans be denuded, without the Help of a Knife. But I question whether this Instrument will always answer the Intention.

PHLASMA, φλάσμα. A Contusion, or Collision.

PHLEBION, φλεβιον. A small Vein.

PHLEBODONODEA, φλεβοδονώδεια, an odd, and sort of foreign, and, for that Reason, obscure Term in *Hippocrates, 1 Prorrh. 101. and Coac. 20.* *Galen* explains it of the Veins or Arteries, agitated by the excessive Heat of the Blood; which happens under a great Effervescence of the Humours, or violent Pains of the Head, when the Veins and Arteries at the Temples, as well as the Jugulars, are subject to a sort of Concussion and Subtus; so that the Word, by Etymology, imports as much as φλέβες δονόμενοι (*Phlebes donumenoí*) Veins agitated. Some, he says, read φλεβονώδεια (*Phlebotonodea*), understanding thereby a Distention of the Veins. Others, to avoid all Ambiguity, write it φλεδονώδεια (*Phledonodea*), deriving it from φλεδόνες (*Phledones*), expounding the Word by παράληψις (*paralepsis*), and apply it to Persons in a Delirium: For φλεδόνες are expounded in the *Exegesis*, by φλυαρία (*phluaria*), Trifles, Follies, and ληξί (Lerí), idle Amusements of delirious Persons. In 4 *Epid.* we read, that The Hypochondrium appeared distended, φλεβοδονώδεια τῇ πύλιν. But we ought, says *Foesius*, to read the Word φλεβοδονώδεια, or φλεβονώδεια, or φλεδονώδεια, and to understand it of a Distention of the Hypochondrium, after the manner of the Veins and Arteries, when under a Distention and Agitation, or Concussion from the Heat and Effervescence of the Blood.

PHLEBOPALIE, φλεβοπαλία. The Vibration, or Pulsation, of an Artery.

PHLEBORRHAGIA, φλεβορραγία, from φλέψ, a Vein; and ρίγνυμι, to break. A Rupture of a Vein.

PHLEBOTOMIA, φλεβοτομία, from φλέψ, a Vein; and τέμνω, to cut. Phlebotomy.

There is not a more excellent, instantaneous, and efficacious Remedy for removing various Diseases, both of the acute and chronical Kind, than Venesection, prudently and cautiously used; for some violent Disorders, of the most dangerous Nature, arise from a Redundance of Blood; from a Suppression of its critical Evacuations from the Uterus in Women; and a Defect or Interruption of the hæmorrhoidal Discharge in Men. A Phlethora, by retarding and stopping the free and equable Circulation, lays a Foundation for Impurities of the Humours, Stagnations, Infarctions, Obstructions, Extravasations, and Ruptures of the Vessels: For whilst the Blood, by its too great Quantity, strongly resists the contractile and elastic Force of the Heart, Arteries, and other Vessels, its progressive Motion through the whole Body is not only retarded, so that it becomes thick, and fit for generating Infarctions, and Obstructions, the fruitful Sources of chronical Disorders, but, also, in delicate Patients, and highly nervous Parts, by exciting spasmodic Strictures, it induces an Inequality in the Circulation of the Humours, and violent and impetuous Congestions, to some of the nobler Parts, which lay a Foundation for terrible Disorders in the Head, Breast, and Pæcordia: These dangerous Disorders are not only prevented, but presently relieved, by Venesection seasonably and duly instituted, especially in Patients who abound with Blood, have large and full Vessels, or who labour under a Suppression of the Menstrues, or Hæmorrhoids: When in the Spring, and about the Equinox, the Air, on account of the Nearness of the Sun to our Climate, becoming thin and rare, produces a violent Expansion in the Blood, there is great Danger of those Diseases which arise from a Phlethora, as *Hippocrates* justly observes; so that, before these Seasons come on, it is expedient to lessen the Redundance of the Blood by Venesection, and by that means prevent the approaching Disorders: Nor is it absolutely necessary we should always accurately observe these equinoctial Seasons; for, when the Quantity of congested Blood requires a more speedy and expeditious Evacuation, or when, about the End of February, and Beginning of March, the serene and tepid State of the Atmosphere produces an Expansion and Turgescence of the Blood, which prove injurious to its progressive Motion, we are not to wait for, but, without Hesitation, to anticipate, the Equinox. I have known some, who from an ill-tim'd Adherence to their usual Custom, have delay'd Venesection till the Equinox, whilst in the mean time, the Phlethora increasing, they died of an apoplectic Fit before that time: Nor are we to listen to those who affirm, that Venesection is only proper at certain Periods of the Moon, or when certain Conjunctions of the Stars happen: But we are boldly,

boldly, and without any Scruple, to take Blood from phlethoric Patients, under all Phases of the Moon, and every Conjunction of the Stars, especially if the Atmosphere is serene and calm: Those, also, who abound with Blood, ought to use Venesection about the autumnal Equinox, lest the Blood should, by the Winter Cold, be inspissated, and become sordid, the Excretions being disturbed by the Inclemency and Variation of the Weather; by which means a Foundation is laid for those Disorders which proceed from an Impurity and Stagnation of the Humours. Some, who greatly abound in Blood, ought to preserve themselves from Disorders, by using Venesection thrice a Year, that is, in the Beginning of *March*, and in the Ends of *May* and *September*.

As a Redundance of Blood indicates Venesection, a Penury of it, and a Defect of Strength, contra-indicate this Operation. A Redundance of Blood is sufficiently known, from the Repletion of the Vessels, the Largeness of the Pulse, the luxurious Diet, the quiet and calm Method of Life, and the Intermission of any critical, natural, or artificial Evacuation; for, when all these Circumstances concur, we may safely and boldly use Venesection. On the contrary, when the Body is infirm and emaciated, and the Pulse weak, in consequence of a Want of Blood and Strength, Venesection is absolutely to be condemn'd, unless we intend to do an immediate Mischief to the Patient; for the Strength of the Pulse depends upon the large and brisk Impetus, with which the Blood is convey'd from the Left Ventricle of the Heart into the large arterial Tube: Now the Strength of the Heart to perform this Expulsion, depends upon the free and sufficient Motion of the Blood through the Coronary Vessels into the Substance of the Heart, as, also, on the Influx of the nervous Fluid into the Fibres of the Heart: When, therefore, the Pulse is weak, small, and languid, from too scanty an Influx of the nervous Fluid, and a laudable Blood, and too weak an Impulse of the Blood into the Arteries, it is highly prejudicial to open a Vein in any Patient, or in any Disorder, because it more exhausts the Blood and Strength, which are already too much impaired.

Those Physicians, therefore, err, who order Venesection either in the Decline of the Disease, or in Cases where one Disease succeeds another, as it happens, sometimes, in Fevers, or violent Hemorrhages. Nothing is more frequent in Practice, than to observe a Suppression of the Menstrues in Women, who surmount any Disorder which consumes their Blood and Strength. But, in this Case, we are not, in order to provoke the Menstrues, to prescribe Emmenagogues, or Evacuators of Blood; but we are rather by Analeptics, and a rich Diet, to generate a fresh Stock of laudable Blood and Humours.

A Defect of Strength, sometimes, arises not from a Penury, but from a Redundance, of Blood: We often perceive a Slowness and Weakness in phlethoric young Persons and Adults, who were before brisk and active. In phlethoric Patients we, also, observe an unusual Languor, both of Body and Mind, a Defect of Sleep, and a preternatural Expansion of the Arteries: In this Case, it is expedient to remove the superfluous Mass of Blood, which, by its Quantity, hinders the systolic Motion of the Arteries, immediately after which the Pulse becomes more frequent and strong. But the skilful Physician must distinguish such an Oppression of the Strength, when present, and arising from a Redundance of Blood, from that Weakness which draws its Origin from a Penury thereof.

After Venesection, the salutary Excretions of Blood, and the Evacuators by Stool, Sweat, and Urine, succeed better, and more freely, than they did before; as all the salutary Excretions depend upon the quick or slow, the brisk or languid, Circulation of the Blood: Hence it is obvious, that if, by a Redundance of the Blood, its progressive Motion, together with the Excretions, is retarded, the diminishing the Plenitude of the Vessels must increase its Circulation, render it more fluid, free the Passages of the excretory Ducts, and convey the Blood more freely and copiously to the Excretories, that thus the Excretions may be the better carried on.

Hence I have often observed, that a Suppression of the Menstrues has soon been removed, by opening a Vein in the Foot. I, also, know several Instances, in which the hemorrhoidal Discharge, after having been a long time stop'd, has been happily restored by Venesection.

It is certain, from Experience, that in plethoric Patients, and those labouring under spasmodic Disorders, an aqueous and limpid Urine is discharged with Difficulty; but, immediately after Venesection, it is evacuated more copiously, and more deeply tinged. *Hippocrates*, also, in *Secl. 6. Aph. 36.* informs us, that "Phlebotomy removes a Difficulty of Urine; and, for that Purpose, opens the Veins of the inferior Parts of the Body." *Riverius*, also, in *Cent. 1. Obs. 1. & 48. & 49.* affirms, that, by Venesection, aqueous Urine has been render'd of a deeper Colour.

I have, also, frequently found, that in hypochondriac Patients, who are generally colicive, the Body has been render'd soluble by Venesection: The Reason of which is certainly this; that in the hypochondriac Disorder, by reason of the difficult Passage of the Blood through the Mesentery and Liver, the Vessels are too copiously filled with Blood; and, by reason of their preternatural

Distention, Spasms are produced in their Coats, and their peristaltic Motion is injured; in consequence of which, neither the Faeces, nor the Flatulencies, are duly evacuated by the Anus: But, by seasonably opening a Vein in the Foot, or, as I have often observed, by recalling the hemorrhoidal Discharge, by the Application of Leeches to the Veins of the Anus, the Circulation of the Blood through the Vessels of the intestinal Coats is render'd free; a due Strength and Motion is restored to the Intestines themselves; and the Faeces are more regularly and naturally discharged.

Venesection is not only often useful to old Persons; but, also, powerfully contributes to Longevity, or the Protraction of their Lives: For it is a common, though a palpable Error, to affirm, that Venesection is absolutely improper in Old-age; as if Persons at this Period of Life were so far from labouring under a Redundance of Blood, that they were rather afflicted by a Deficiency of that Fluid, and a Want of Strength. We may indeed readily grant, that all old Persons are not phlethoric, and, consequently, do not stand in need of Venesection; nor does Age of itself contribute to the Repletion of the Vessels: But, at the same time, there are some vigorous, robust, and sound old Persons, furnished with capacious Vessels, who not only eat heartily, but are, also, capable of duly concocting and digesting the heaviest Aliments; in consequence of which, it is not to be doubted but a copious Chyle and Blood will be generated from well-concocted Aliments; and such a State is sufficiently apparent from the florid Colour of the Countenance, and the Turgescence of the Vessels with Blood: It, also, frequently happens, that not only Adults, but, also, Persons extremely old, discharge large Quantities of Blood from the hemorrhoidal Veins, without any remarkable Loss of Strength: And I myself have known some Persons of eighty Years of Age, who have evacuated large Quantities of bloody Urine, without a perceptible Decrease of Strength. Besides, Age is not very fit for Motion and Exercise; and, for this Reason, the Excretions cannot bear a due Proportion to the Quantity of Aliments taken; and, as the Blood is little consumed by Heat and Motion, there must, necessarily, be produced a Redundance of Humours, and an Infarction and Plenitude of the Vessels, which, unless seasonably removed, lay a Foundation for those Disorders which are most familiar to old Persons, such as Wasting of the Flesh, Coughs, Coryzas, Hoarseness, Pains of the Joints, Palsies, a Difficulty of Urine, Stones of the Kidneys and Bladder, Itchings, and the dry Itch: Which Disorders do not proceed immediately from a Redundance of the Blood, but, rather, from an Impurity of the Serum; but, at the same time, this Impurity of the Serum derives its Origin from the Redundance of the Juices, by which the Excretion of the Sordes is prevented.

I know many Instances of old Persons who have lived sound, robust, and free from the ordinary Diseases incident to Old-age, by no other means than Venesection, used twice a Year. And that Venesection is not unfriendly to Old-age, is sufficiently obvious from this, that almost all the *Swiss*, even when eighty or ninety Years of Age, use Venesection every Year. See *Wepfer, Lib. de Apoplexia. Primrose, also, Lib. 4. de Vul. Error. Cap. 23.* evinces from three Instances, that Persons of eighty Years of Age may commodiously bear Venesection in the most violent Distempers, whether arising from internal or external Causes: This I have, also, found confirmed by frequent Experience. But we are by no means from this to conclude, that Venesection is proper in old Persons, who are weak and languid, whose Appetite is lost, or who labour under a Weakness of the Stomach and Intestines, and, especially, in those who have previously struggled with some long and chronical Disorder.

In continued and acute Fevers, Venesection is generally not only useful, but absolutely necessary: It is surprising, that some eminent Physicians, in other Cases remarkable Patrons of Venesection, should yet maintain, that in all acute Fevers, whether of the benign or malignant Kind, as, also, in exanthematous Fevers, and those that are not such, it is so far from being necessary, that it is rather pernicious, except in the Synocha, in which they do not think it absolutely necessary; but only when it is accompanied with a Phlethora, and an Orgasm: They assert, that it has been frequently observed, that Venesection, in the Beginning of such a Fever, has, about its State or Height, produced dangerous Translations and Congestions of Blood to the Head, which induce Convulsions, and a mortal Phrenitis: They are, also, of Opinion, that Nature, which always wisely governs the animal Oeconomy, does not in these Fevers intend an Evacuation of the redundant Blood; but only a Resolution of it into an excrementitious Serum, with a Secretion of the noxious Matter, by means of an intense Heat; and that, for this Reason, Venesection is, in these Cases, contrary to the Intention of Nature, since, by it, the salutary Work of Secretion is disturbed. But this Doctrine is overthrown, both by Reason and Experience: For I have known many robust Persons, both young and full-grown, who, being full of Blood, and seized with these Fevers, in consequence of the Omission of Venesection, have, in a few Days, died of a Phrenitis, an Inflammation of the Stomach or Fauces, or a Peripneumony. In such Cases, after Death, the whole

whole Body has been found surprisingly tumid, and the sanguineous Ichor has been copiously discharged from the Nostrils: A prodigious Stench, also, accompanied with Putrefaction, has immediately succeeded; for no other Reason but the inflammatory Stagnation of the Blood. On the contrary, I have, from many Observations, found, that Venesection, only once performed, in Patients labouring under acute Fevers, has not only diminished, or absolutely removed, the Anxieties of the Patients, but, also, a Train of other terrible Symptoms. This Doctrine is, also, confirmed by the Practice of the *French*, who, in all Fevers, with great Success, use Venesection, not only once, but twice, or oftener, if the Condition of the Patient indicates its Propriety: But that Venesection, about critical Times, produces Translations of Blood to the Head, is an egregious Mistake; for though Phrenies and Convulsions frequently happen, in those who labour under acute Fevers, yet the same Misfortunes happen, and that too more frequently, when Venesection is omitted, than when it is used: And since almost all who die of acute Fevers, are seized with a Phrenitis and Convulsions, certainly, if Venesection is the Cause of these Symptoms, a Person labouring under an acute Fever, cannot readily die, if that Operation is neglected.

I, on the contrary, do not hesitate to affirm, that, in acute Fevers, Venesection is often not only useful, but necessary; for Persons seized with acute Disorders have always rather a Redundance, than a Penury, of Blood and Humours: Now it is certain, that the very Essence of a Fever consists in an Augmentation of the Tone, and a certain spasmodic Stricture, of all the Vessels and Fibres, upon which both the Circulation of the Blood, and the Increase of the Heat, depend: It is, also, known, that by Spasms the Diameters of the Vessels are lessened; and that, by Heat, the Humours are expanded, and possess a larger Space: For which Reason the redundant and raging Blood, being denied a free Passage through the Blood-vessels, is impetuously agitated hither and thither, and forced, as to improper Parts, thro' Vessels whose Diameters are naturally too small for the Admission of the Blood, where it remains, becomes stagnant, and lays a Foundation for dangerous Inflammations, which are most effectually prevented by seasonable Venesection. This is sufficiently confirmed by the Authorities of the most skilful Physicians; for *Hippocrates* himself, in his *Treatise de Ration. Vi&it. in Acut.* warmly recommends Venesection, in acute Disorders: Besides, the Antients, in these dangerous Diseases, used Venesection till a Delirium was brought on, as we are informed by *Galen*, in *Lib. 1. de Rat. Vi&it.* where he tells us, that such Venesection as brings on a Delirium is only to be used in the most acute Diseases, and in those Patients who are robust and vigorous, in the Flower of their Age, and abound in Blood, as, also, where the Climate, the Air, and the Season of the Year, are very temperate. The Diseases of this Kind are highly burning Fevers, intense Pains, considerable Inflammations of the Viscera, Carbuncles, a Synochus, an inflammatory Lassitude, and violent Pains of the Joints: For, in all these Disorders, when a large Quantity of Blood is evacuated, the Heat is immediately abated; in some of them the Body is render'd soluble, or Sweats are excited; by which means the Disease is either terminated, or at least diminished, according to *Hallerius*, in *Comment. ad Aphor. 3. Sect. 1. Hippocr.*

In Exanthematous Fevers, also, those of the Petechial and Purple Kind, the Measles, and Small-pox, and even the Plague, Venesection is so far from being unsafe, that, when prudently used, it proves highly beneficial. It is a Dispute of great Importance among Physicians, whether in those Disorders, in which the peccant Matter is forced to the Surface of the Body, Venesection may be properly and successfully used: Some espouse the Affirmative, and others the Negative, whilst both appeal to Experience: But a due Distinction is to be made, and Venesection is to be accommodated to the Nature and Variety of Circumstances: Thus, for Instance, when the Humours are defective; when, in the Beginning of a Disorder, the Strength is impaired; when the Pulse is weak, hard, and small, the Vessels numerous, but narrow; when the Strength is diminished by any Affliction of Mind, or by a Flux; in a Word, where-ever there is a Malignity of the Humours; Venesection is rather prejudicial than salutary: For, in order to eliminate a Matter which offends, not so much by its Redundance, as by its caustic, subtle, and virulent Quality, so prejudicial to the nervous Parts, a strong moving Force of the Heart and Arteries is required; which can only be expected from a sufficient Influx of the Blood, and nervous Fluid. Besides, this peccant Matter to be expelled can only be conveyed to the Surface of the Body, by the Assistance of the Blood and Humours; since, when the Diameters of the Vessels are small, they easily collapse, and are only filled by a brisk and lively Impulse of the Fluids: If, therefore, a Physician, by Venesection, diminishes the already defective Blood, Humours, and Strength, he does a terrible Injury to the Patient; since, by this means, the peccant Matter remaining within, like a Poison, perverts the Motion of the Solids and Fluids, and proves mortal.

But quite different Measures are to be taken, when, in consequence of the Redundance of the Blood, and its Rarefaction by the febrile Heat, the Coats of the Heart and Arteries are so distended, that their Systole is diminished, and almost suppressed;

in consequence of which, the Blood is not freely convey'd to the small cutaneous Tubes, that the peccant Matter may be duly secreted and eliminated; for, in such a Case, Reason informs us, that, when a certain Quantity of the Blood is evacuated, the remaining Part circulates more briskly, the equable Resistance of the Coats to the Impulse of the Fluids, and the systolic and diastolic Motion, are restored, by which the Secretion and Evacuation of the peccant Matter is excellently carried on: This most frequently happens in young and phlethoric Persons of sanguineous Constitutions, who live high, or are accustomed to an indolent Course of Life; as, also, in those Constitutions, in which an immoderate Indulgence of boundless Passion has diminished the Excretions, and, consequently, generated a Redundance of Humours. Patients of this kind, when labouring under a purple, petechial, a catarrhus, benign, or malignant Fever, or the Small-pox, are exposed to the most certain and infallible Danger, by an Omission of Venesection; whilst, on the contrary, those Disorders are happily removed, when, by diminishing the Phlethora, the free Circulation of the Blood is restored.

In Exanthematous Fevers already appearing on the Skin, Venesection is so far from being prejudicial, that it is sometimes highly beneficial. It is a common Opinion, that upon the Efflorescence of Petechial and Purple Fevers, the Measles, and Small-pox, it is neither proper to use Venesection, nor Purgatives, lest the malignant Matter, being by these means recalled into the Habit, should produce an irreparable Loss. But though it is an Observation of great Importance, and supported by Experience, that Venesection is not to be used, when Nature is employ'd in the Work of Excretion, and when the exanthematous Eruptions have not had a long and fixed Seat in the Skin; yet there are Cases, in which, after the Appearance of the Efflorescences, Venesection is both useful and necessary: For I have observed, in those who have died of a Purple Fever, whether of the primary or secondary Kind, or of the Measles, or Small-pox, violent Spasms, not only of the Joints and Extremities, but, also, of the Abdomen, which, in consequence of the Contraction of the Skin, were succeeded, not only with a Retrocession of the Efflorescences, but, also, with a violent Anxiety, a Tossing of the Body, and frequently a Delirium, accompanied with a Delirium; all which mortal Symptoms are not, as is commonly believed, so much produced by the Retrocession of the exanthematous Matter to the internal Parts, as by the Impetus and Congestion of the Blood to the Heart and Brain: Hence, induced by the Reason of the Thing alone, in one Year's Time, I, by Venesection in the Arm, saved four Childbed Women labouring under so violent Purple Fevers, that their Lives were despair'd of; for, as soon as a Vent was given to the Blood, the Anxiety about the Præcordia, and the Deliriums, were removed, and the Patients forthwith became better, to the great Surprise of the Surgeon and By-standers, who predicted the Death of the Patients, under the very Operation which could only afford them Relief. In a young Man, also, dangerously ill of the Small-pox, when an imminent Delirium, and a violent Anxiety about the Præcordia, threaten'd Death, I successfully order'd Venesection in the Arm. Nor does this Piece of Practice want the Authority of some of the most celebrated Physicians to support it: Thus *Botallus*, that noted Patron of Venesection, in *Lib. de Venese&it.* informs us, that, with great Success and Advantage, he order'd Venesection in peltiential Buboës, and other exanthematous Disorders, if the Fever did not remit. *Muraltus*, also, not to mention others, in *M. N. C. Dec. 2. An. 7. Obs. 115.* observes, that Venesection proved salutary in an epidemical Fever, in which a large Number of Papulæ appeared on the Body.

In the Paroxysms and Exacerbations of Fevers, and other Diseases, Venesection is dangerous; but is beneficially used on the intervening Days: In the Paroxysms of intermittent Fevers, under an immediate Fit of an Epilepsy, or the hysterical or hypochondriac Disorders, and in Cases where the Extremities are cold, or internal Heat and Anxieties rack the Patient, Venesection not only augments the Violence of the Symptoms, but, also, endangers the Life of the Patient. The Reason of this is obvious; for the Exacerbation of Symptoms and Diseases is accompanied with Spasms, especially of the external Parts, as, also, of the Stomach and Intestines; by which the free Circulation of the Blood is intercepted, and the Blood itself forced, with a greater Impetus, to the large Vessels, and especially to the Breast and Heart: If, therefore, any one attempts Venesection in the Arms or Feet, when all the Parts are spasmodically constricted, he will in these Parts infallibly augment the Spasms; for the larger Quantity of Blood is taken from these Parts, the more the spasmodic Contraction of the Fibres is increased; since nothing more powerfully resists this spasmodic Stricture, and the Regurgitation of the Blood to the internal Parts, than a strong Impulse of the Heart and Arteries, and a liberal Afflux of the resisting Blood to the Parts: Hence it is expedient to delay Venesection till the Day of Intermission or Remission, when the Spasms are remitted, and the free Afflux of the Blood to the Parts is restored.

But there are some Cases, in which it is expedient, even under the spasmodic Paroxysms, though not in the Parts spasmodically affected, but in those to which the Blood is conveyed with the greatest

greatest Impetus: Thus it often happens, that, in consequence of Spasms of the Parts of the Abdomen, or of the Legs and Feet, which are extremely cold, either on account of a Fright, or any other Cause, the Blood is impetuously convey'd to the Breast and Head, and threatens an Apoplexy, or a Suffocation; in which Case, a Vein opened, not in the inferior, but superior Parts, is highly useful, and affords present Relief.

There is, therefore, a slight Species of Apoplexy, which may be removed by Venesection alone, when, either by the Violence of some Passion, especially a Fright, or by terrible Spasms of the inferior Parts, the Blood being with such an Impetus convey'd to the Head, as, by its Quantity, to distend the Vessels of the Membranes of the Brain, their systaltic Motion is checked, and a slight Species of Apoplexy produced. This Species of Apoplexy is very familiar to hysteric Women, to Persons of plethoric Habits, and those of delicate Constitutions and Minds; and is, by the unskilful and unthinking Part of Mankind, taken for a Deliquium; from which, however, it is widely different; For, in a Deliquium, there is no Pulsation of the Heart and Arteries, the Face is pale, and the Breathing imperceptible; but, in this slight apoplectic Paroxysm, the Use of all the Senses, whether external or internal, is totally destroyed, the Limbs remain immoveable, there is a violent Palpitation of the Heart, the Pulse is large and quick, and the Face tumid and red: Nor does this slight Apoplexy arise from a Rupture of the Vessels, which is an incurable Disorder; nor from a Secretion of the Serum, which terminates in a Palsy; but only from a Stagnation of Blood in the Cavities of the preternaturally distended Vessels; for it is certain from anatomical Discoveries, that the carotid and vertebral Arteries, as soon as they enter the Cranium, and run through the Membranes of the Brain, lay aside their thicker Coats, with which all their other Parts are covered: For which Reason it is not to be wonder'd at, if, by the Quantity and Impetus of the Blood convey'd to the Brain, their contractile and elastic Force, by the Assistance of which the Blood is farther protruded into the venous Sinuses of the Head, is diminished or destroyed; by which means the Systole of the Carotids being destroyed, the Blood stagnates in the too much distended Vessels of the Membranes of the Brain, and in the Plexus Choroidei: Hence the Secretion and Influx of the nervous Fluid, on which Sensation and Motion depend, are intercepted and destroyed: Hence it is obvious, that, in order to restore the due Systole of the Vessels, the free Circulation of the Blood through the Head, and the Influx of the nervous Fluid into the Nerves, there can be no more proper and efficacious Remedy, than taking a sufficient Quantity of Blood from a large Orifice made in one of the Veins of the Arm; for, by this means, in a short time, Reason, Sensation, and Motion, are restored.

But those Physicians ill consult the Safety of their Patients, who, for want of a sufficient Knowledge of the Causes of this Mistrum, order Venesection in the inferior Parts, because these are, in such a Paroxysm, generally spasmodically constricted, cold, and too remote from the Part affected, by which Circumstances the Derivation of the Blood is rendered less expeditious and commodious. Besides, I have often observed, in Patients whose whole nervous Systems were disposed to spasmodic Contractions, and whose Extremities were always cold, that by Venesection, even when scanty, the Violence of the Spasms in the inferior Parts has been in a few Hours increased: In consequence of which, the Blood, being afterwards impetuously convey'd to the Brain, produces the apoplectic Fit above described, and which, in Process of Time, becomes so violent, as to cut off the Patient, or, at least, leave behind it a Palsy, or Loss of Memory, unless removed by a speedy and reasonable Venesection.

Disorders of the Head arising from a Congestion of Blood, and a Distention of the Vessels, require a Venesection, which, however, is to be performed in the adjacent Parts. A violent and obstinate Head-ach, a frequent Hæmorrhage from the Nose, melancholic Madness, a Vertigo, an Ophthalmia, an Erysipelas of the Head, and Inflammations of the Larynx and Pharynx, very frequently draw their Origins from Spasms, too great a Congestion of Blood to the superior Parts, and a violent Distention of the Vessels; especially in hypochondriacal Patients, and in Cases where the Stomach and Intestines are turgid with Flatulencies and Sordes, or are spasmodically constricted; as, also, in Cases where the free and equitable Circulation of the Blood is so intercepted, that, rushing copiously and impetuously to other Parts, especially the Head, it there produces these Disorders. In such Cases, for preventing Danger, and deriving the Impetus of the Blood elsewhere, it is expedient to open a Vein, either in the Forehead, the Temples, under the Tongue, or in the Neck.

In violent Cephalalgias, Ophthalmias, and Quinsys, Venesection under the Tongue is always highly beneficial; but, in a Phrenitis, Melancholy, and an Head-ach, arising from internal Causes, it is most expedient to open the external Jugular Vein; and, if this cannot be found, the Vein which runs longitudinally along the Forehead, and is a Ramification of the external Jugular, is to be open'd; the Neck being previously tied with a Ligature under the Chin, and the Breath retain'd. The Opening of this frontal Vein was very common among the Antients. Thus Hippocrates, in

Secl. 5. Aph. 68. informs us, "that a Pain in the posterior Part of the Head is relieved by opening the Vein running along the Forehead." And Hollerius, in his Commentary on this Aphorism, tells us, "that 'tis certain from Experience, that many have been instantaneously freed from Head-achs, by opening the same Vein." Alexander Trallian, in Lib. 1. Cap. 13. greatly recommends the opening of the frontal Vein in a Phrenitis; and affirms, that he suddenly cured a phrenetic Patient by that Means; and in the 16th Chapter of the same Book, de Melancholia, he has these Words: "If a sanguineous Matter is impacted in the Brain, we are boldly to open the frontal Vein; for, in consequence of the Evacuation of the whole other Parts of the Body, there is no Harm produced by immediate Applications to the Part affected."

Tho' we are certain from Experience, that in violent Disorders of the Head, opening the frontal Vein, those behind the Ears, the external Jugulars, and the sublingual Vein, are of great Service, yet this Practice is not to be universally recommended; nor is it proper in all Cases, since we are to have a particular Regard to the State and Constitution of the Patient; for if such Disorders of the Head are accompanied with a Plenitude of the Vessels, or if violent Spasms of the inferior Parts convey the Blood copiously and impetuously to the Head, it is to be dreaded, lest opening a Vein in the Head should invite a larger Quantity of Blood to it. For this Reason the most skilful of the Antients unanimously advise, that, at the same time, a Vein should be open'd in the Arm, or in the Foot. Thus Alexander Trallian, in Lib. 1. Cap. 16. tells us, "that if we attempt any Cure on the Head, before the Body is freed from its recrementitious Juices, we do Harm rather than Good; since by that means a larger Quantity of Humours is attracted to the Part affected." Hollerius, also, in Comment. in Aph. 68. Secl. 5. of Hippocrates, informs us, "that, if a Pain of the Head is accompanied with a Plethora, we must first open a Vein in the Cubit, and then the frontal Vein; but, if there is no Plethora, we may forthwith safely open the frontal Vein; and if the Pain of the Head is produced by Consent, if, for Instance, it arises from a Suppression of the Menstrues, we are first to open the Vein in the Ankle, then that of the Cubit, and then the frontal Vein. If the Head-ach arises from some Disorder of the Diaphragm, or Liver, we are first to open the cubital, and then the frontal Vein."

With respect to opening the sublingual Veins, in an Angina, it is, also, to be observed, that in a plethoric Habit, this Practice is dangerous, unless the Plethora is previously removed, by opening a Vein in the Arm. We are, therefore, to follow the Directions of Alexander Trallian, who, in Lib. 4. Cap. 1. de Angina, uses these Words: "In Cases of Necessity, I have, in the Morning, open'd the cubital Veins, and then the frontal; after which, by exhibiting Cream of Ptisan in the Evening, I have perfectly cured a Quinsy. I have, also, with great Success, open'd the jugular, when I could not find the sublingual Veins."

In Disorders of the Breast, such as a genuine Pleurisy, and a Peripneumony, Venesection in the Arm is often highly necessary. Tho' a spurious Pleurisy, which is a Species of Rheumatism, or arthritic Pain, and which arises from an acrid Serum contain'd within the Pleura, and surrounding the Ribs, does not always require Venesection, but is often happily remov'd by a Diaphoretic; yet quite different Measures are to be taken, in a true Pleurisy and Peripneumony, the former of which is only a slight, and the latter a more profound Inflammation of the Lungs, arising from a Stagnation of Blood, firmly impacted in their Vessels; for, in these, Venesection is not only necessary, but, if there is a Plethora, must be repeated, in order to prevent the Increase of the Inflammation; which End is obtained, when the Blood, which is too copiously congested in the Vessels, stagnant, and incapable of a free Circulation, is, for the sake of a better Derivation, drawn from the most contiguous Part, making a large Incision in the Vein, that thus the Blood may be the more quickly and impetuously deriv'd from the Lungs.

Venesection is of singular Use for the Purposes of Evacuation, Revulsion, and Derivation: The evacuating Use of Venesection is to diminish the Quantity of the Blood; and, when this Intention alone is pursued, it is of no Importance, from what Part of the Body the Blood is taken. The derivatory Use of Venesection is to attract the Flux of the Blood from any Part affected to other Parts, from which it may be more commodiously evacuated. Thus, in violent spasmodic and flatulent Disorders of the Abdomen, and in Diseases arising from a Suppression, or retarded Discharge, of the Menstrues or Hæmorrhoids, 'tis safer for the Purposes of Derivation to open a Vein in the Foot, rather than in the Arm. Hence Hippocrates, in Lib. de Nat. Hum. justly informs us, "that, in Pains of the Back and Coxendices, we are to use Venesection in the Hams and Ancles." And Severinus, in his Treatise de efficaci Medic. Cap. 26. informs us, that, for preventing nephritic Pains, promoting the hæmorrhoidal and lochial Discharges, as, also, in Inflammations and Fallings down of the Anus, in Vomitings of Blood, and Schiatic Pains, a Vein is with great Success opened in the Foot: On the contrary, in Disorders of the Head, such as an Apoplexy, a Lethargy, Madness, Melancholy, a Phrenitis,

a Phrenitis, a suffocative Catarrh, a sanguineous Asthma, a Spitting of Blood, a Pleurisy, a Peripneumony, a spurious Inflammation of the Liver, the too great Quantity and Influx of the Blood, which ought speedily to be deriv'd to other Parts, are more happily remov'd by opening a Vein in the Arm, which is far nearer the Part affected: But Revulsion, or rather Avulsion, is made, when the Impetus of the Blood is recal'd, or, as it were, drawn upwards, from the inferior to the superior Parts. Thus, in too profuse a Discharge of the Menfes or Hæmorrhoids, a Vein is successfully open'd in the Arm. The same Practice is, also, expedient in pregnant Women, in order to prevent Abortion, if the Vessels of the Uterus are so much infarcted and distended with Blood, that the Weight of the Uterus, pressing downwards, becomes burdensome and uneasy to the inferior Parts.

Venesection is to be prudently us'd for the Purposes of Derivation and Revulsion; for, if Obstructions of the Vessels arising from impacted Blood are to be remov'd, it is expedient not to take a large, but a moderate Quantity from the most contiguous Part; because, by this means, the Remainder of the Blood is more impetuously convey'd to the Part affected, and carries off the stagnant Blood lodg'd in the small Vessels, since moderate Venesection accelerates the too languid Motion of the Fluids in the Vessels. Hence, opening the Vena Saphena often instantaneously restores the menstrual Discharge; and the hæmorrhoidal Discharge, when too slow, is happily promoted and accelerated by opening a Vein in the Foot; whereas these Effects are often not produc'd, by taking a large Quantity of Blood from the Arm, or the Foot; but, if the Disorder is inveterate, and the Obstructions of the Vessels so great, that it cannot be remov'd, in such a Case, if the Patient is plethoric, opening of the Vena Saphena is more hurtful than beneficial; because it invites the Blood more copiously to the Uterus, by which means a greater Obstruction of the Vessels is produc'd. Nor in an Hemicrania, or obstinate Head-ach, in a chronical Vertigo, or in Melancholy, does Venesection in the frontal Vein afford any Relief; because by that means a greater Afflux of Blood to the Head is produc'd, and the obstructed Vessels of the Membranes of the Brain more infarcted. 'Tis, therefore, better, in such Cases, to take Blood from the inferior Parts: In recent Ischiadic Pains, Venesection in the Foot often affords immediate Relief; whereas, when the Disorder is inveterate, it rather increases it. In Bodies, therefore, full of Blood and Juices, 'tis far more safe, according to the Advice of *Holærius*, in *Comment. in Sect. 4. Aphor. 36.* first to open a Vein in the Arm, and then the Schiatic Vein, that there thus may be a Revulsion of the Blood in various Places, at one and the same time. The same Author, also, justly informs us, that in Dysurics proceeding from Infarctions of the Kidneys with Blood, as, also, in Inflammations of the Bladder, we are first to open a Vein in the Arm, and then the Vena Saphena, in the Ham or Ankle. From what has been said, 'tis sufficiently obvious, that Venesection may be us'd in a Part very contiguous to that affected, if the Disease is recent, its Cause moveable, and the Plenitude of the Vessels not very great; but when the Disease is of a long Standing, and the Body abounds with too much Blood, we are first to use Venesection in the more remote, and then in the more contiguous Parts of the Body.

It is of great Importance to take away only a due and proper Quantity of Blood; and sometimes there is a necessity for reiterated Venesection. Young Persons, those of tender Habits, such as have small Vessels, and Women who readily fall into *Deliquiums* by means of large and copious Venesection, ought to abstain from it, if possible; but, if it should be absolutely necessary, the Orifice should in such Persons be made small, and the Blood but gradually evacuated, compressing the Incision at proper Intervals with the Finger. But Women, after fifty Years of Age, when their Menfes generally cease, require a larger Extraction of Blood, which, also, holds in robust Men with large Vessels, and in Persons, who, being accusom'd to rich and delicate Living, begin to have the hæmorrhoidal Discharge cease. In the Spring, especially in May, People can bear larger Evacuations of Blood, than in the Summer, or Autumn; but a moderate Quantity of Blood is only to be taken away in excessive Hæmorrhages, such as Spitting of Blood; as, also, enormous Discharges of the Menfes, and Hæmorrhoids: Nor is it expedient to deprive the Body of a large Quantity of Blood, before the ordinary Time of the Menfes, lest the subsequent Discharge should either totally cease, or be considerably diminished.

In all inflammatory and exanthematous Fevers, if, in consequence of a Plethora, there is a Necessity for Venesection, we are to be very careful, that only a due Quantity of Blood be taken away; for, if, in case of a Redundance of Blood, too small a Quantity of it, such as an Ounce or two, is taken away, the organic Expansion of the Blood is often augmented; so that it is so far from being beneficial, that it rather does Injury by increasing the Inflammation, and preventing the Eruption of the exanthematous Matter. In like manner, if too large a Quantity of Blood is taken away, more Harm than Good is

done, since by this means the Expulsion of the exanthematous Matter, which ought to be conveyed to the Skin by the Blood, is hinder'd, and the peccant matter, to the great Detriment of the Patient, retain'd in the Habit. In a Peripneumony and Pleurisy, too copious Venesection hinders the Expectoration and Discussion of the inflammatory Matter, which ought, also, to be evacuated, and carried off, by means of the Blood. In Rheumatisms, an Erysipelas, and arthritic Pains, both of the fix'd and wandering Kind, it is, also, necessary to leave a Quantity of Blood sufficient for the Cure of these Disorders; that is, we are neither to take away too large, nor too small a Quantity.

If a Plethora not only oppresses the Vessels, but, also, impairs the Strength, a large Quantity of Blood, such as a Medical Pound, for Instance, is to be taken away; for, if only a small and inconsiderable Portion is evacuated, the Blood finding a greater Space, its Elasticity is more increas'd, it becomes more expanded, and often acts with a greater Impetus on the Part affected. I have known Instances, says *Hoffman*, where, in considerable Plethoras, the Extraction of a small Quantity of Blood, an Ounce or two, for Instance, has a few Hours after been succeeded by an apoplectic Fit, which has been happily remov'd by liberal Venesection in the Arm, from which eight Ounces, for Instance, have been taken. I, also, remember, says he, that, in a certain plethoric Person, violent Anxieties of the Præcordia were produc'd by a Suppression of the hæmorrhoidal Discharge, arising from Cold. Upon opening a Vein in his Foot, and taking away only four Ounces of Blood, all the Symptoms were augmented, such as the Anxiety of the Præcordia, the Watchings, the Inquietudes, and Difficulties of Breathing, which, however, forthwith ceas'd upon taking seven Ounces of Blood from his other Foot.

Rheumatisms, Catarrhs, Coryzas, and Coughs, are often generated by a preposterous and unskillful Venesection, which, however, when seasonably us'd, proves an excellent Means for preventing and removing these Disorders. I have frequently observ'd, says *Hoffman*, in the Course of my Practice, that a few Days after Venesection, especially in the Spring and Autumn, when the Weather is not calm and serene, many have fallen into violent Catarrhs, Coryzas, Coughs, rheumatic Disorders, and catarrhal Fevers; and this happens very frequently, especially when Persons, not sufficiently clothed, expose themselves to the cold and moist Air, particularly in the Evenings; for it almost always happens, that the Perspiration is diminish'd by a pretty copious Venesection, in consequence of which, the Humours usually carried off thro' the Pores of the Skin, in the Form of Vapours, are, in some measure, retain'd in the internal Parts; and this happens most frequently in Persons of spongy Habits, and small Vessels. Nor is this Phenomenon hard to be accounted for: When a large Quantity of Blood is taken away, the Vessels, especially such as are small and near the Extremities, being before distended with Blood, begin to be flaccid and empty. And as there is an exquisite and highly sensible Tone in the subcutaneous Integuments, hence it happens, that, on the Access of a cold Air, the elastic Fibres of the Skin are contracted, and the sudoriferous Ducts by that means block'd up; in consequence of which, recrementitious Sweat not only remains in the Habit, but, also, is forced from the external to the internal Parts, especially to the glandulous Parts of the Fauces and Bronchia, or to the mucilaginous Glands of the Joints, or to their glandular Ligaments, where an highly acrid, saline, and stagnant Serum, exciting violent Irritations and Constrictions of the Vessels, hinders the free Circulation of the Humours; by which means, Secretions of Serum, Pains, intense Heats, and a copious Afflux of Humours, are excited.

But as an unskillful, or too copious, Venesection lays a Foundation for Catarrhs, so it is frequently observed in Practice, that Venesection prudently us'd in the Spring and Autumn, and repeated every Year, has freed many of Coryzas, Stuffings of the Head, and annual Coughs, and especially, those who before abounded in Blood, and have never had a Vein opened before. In the Spring, in consequence of the Rarefaction and Expansion of the Air, the Vessels are turgid, on account of the Expansion of the Blood, by the Access of a subtiler Ether: If therefore, an Evacuation of Blood, either natural or artificial, is not made, Stagnations of Blood, and Humours, and Secretions, and Depositions of Serum, readily happen in the most lax, soft, and glandular Parts: all which Misfortunes may be happily prevented by seasonable and prudent Venesection.

As the flatulent Colic is sometimes augmented by Venesection, so those of the convulsive and hæmorrhoidal Kind are often alleviated, and totally remov'd, by it. Those Flatulencies which violently distend the Intestines, most frequently depend upon a want of due Tone in them, or a Weakness of their peristaltic Motion; for since, by the Force of this Motion, not only the Flatulencies, but, also, the other Contents, of the Intestines are carried downwards, so when it is either diminish'd, or totally destroy'd, Flatulencies are copiously generated, and become stagnant, especially in the Flexures of the Colon about the Hypochondria; but this want of Tone in the Intestines principally arises from the Defect of a laudable Blood, and ner-

vous Fluid; for which Reason old Persons, People after Recovery from a Disease, those weaken'd by any long-protracted Disorder, or Indisposition of Mind, those abounding in Phlegm, or who feed upon very refrigerating Aliments, are frequently subject to a particular Species of Coic, which is happily cur'd, not by Venesection, or diminishing the Quantity of Blood, but by carminative Medicines, possess'd of a balsamic and aromatic Principle. But other Measures are to be taken with the spasmodic or convulsive Colic, which arises from Blood lodg'd in the intestinal Coats, and violently distending them; for seasonably opening a Vein in the Foot not only proves a Preservative against this terrible Misfortune, but, also, affords present Relief under it, as *Riverius*, in *Cent. 1. Obs. 44.* has justly observ'd.

Both before and after Venesection, some Cautions are to be observ'd as useful: For,

1. We are not, except in Cases of urgent Necessity, to open a Vein in the Equinox or Solstice themselves, at full or new Moon, or in a rainy and gloomy Day. But 'tis expedient, a few Days before these Seasons, and on a clear and serene Day, to use Venesection as a Preservative; because about these Seasons the Discharge of the Menfes generally happens, and various Disorders of the spasmodic Kind, epileptic Paroxysms, and the Diseases familiar to hypochondriac and melancholic Patients, generally return; and before the Paroxysms of these Diseases it is expedient, by Venesection, to free the Body from its superfluous and redundant Blood.

2. It is always expedient, in Persons who readily faint, to constitute Venesections, not with an empty Stomach, but after taking a little Broth, making the Orifice at the same time but small.

3. After Venesection, it is highly improper to load the Stomach with Meat or Drink; and much more, to drink to Excess, or expose the Body to a cold or moist Air; for 'tis certain, from frequent Experience, that by these means many, especially in the Months of *March* and *October*, and particularly if they are of a spongy Habit of Body, fall into Coryzas, Coughs, Rheumatism, catarrhus Fevers, and spurious Pleuritis; for by Venesection, especially when copious, the Perspiration is considerably diminish'd, because the exhausted Blood no longer keeps the subcutaneous and sudoriferous Ducts so open as they were before. Hence the cold Air, by closing them up, and repelling the Humours from the Surface of the Body to the interior Parts, produces the now-mention'd Disorders.

4. Before Venesection, it contributes to Health to free the Primæ Viæ and Stomach from Crudities and Sordes, not by a drastic Purgative, but by a gentle Laxative; for we are by no means to exhibit strong Purgatives to plethoric Persons, because, by exciting Spasms of the Intestines, they by that means disturb the free Circulation of the Blood, and produce prejudicial Congestions in various Parts of the Body.

5. In Women, on account of the menstrual Discharge, and in Men subject to the Hemorrhoids, it is always expedient to open a Vein in the Foot, lest the Blood should be derived from these Emunctories. But Men free from the Hemorrhoids ought not to accustom themselves to Venesection in the Foot; for I have by that means seen blind Hemorrhoids, without any Discharge excited, for removing of which Venesection in the Arm ought to be instituted.

6. After Venesection, a careful Regimen is to be observ'd; nor must the Patient forthwith return to his former Diet, and Method of Life. Hence we cannot forbear condemning the Custom of the *Germans*, who never eat and drink more plentifully than after Venesection.

Cupping with Scarification is often us'd as a Succedaneum for Venesection. Thus *Celsus*, in *Lib. 2. Cap. 10.* informs us, "That the principal Use of Cupping-glasses is when any Fault is lodg'd, not in the Whole, but in some particular Part, of the Body, to which, for the Purposes of Health, they need only be applied: And this is a Proof, that, in order to relieve any Part, we are, with the Knife or Lancet, principally to take Blood from the Part affected, since no one applies Cupping-glasses to a distant Part, unless when he intends to derive the Blood from it, but to the Part affected, and which is to be reliev'd." For this Reason, in Rheumatism, especially such as affect the Back, Scapulae, and Arms, and in Pains of the Gout, a profound Scarification is with great Advantage made; as, also, in Parts affected with a pressory and constricatory Pain; but it is observable, that a smaller Quantity of Blood is always obtain'd from the injured, than from a sound Part. In order to prevent Gout-pains, some, every Month, with great Success, use Scarification, either on the Sole, or on the upper Part, of the Foot. In Efflorescences, and Defecations of the Face, Cupping with Scarification is, also, useful, in order to derive the Blood from that Part. In fat and spongy Habits, this Practice is, also, useful, for removing Itches, and cutaneous Deformities.

In acute Disorders, where the Strength does not admit of a quick and speedy Evacuation of Blood by Venesection; it is expedient, gently, and by degrees, to procure this Evacuation, if ne-

cessary, by Cupping, with Scarification. Thus *Celsus*, in *Lib. 2. Cap. 11.* informs us, "That Cupping, with Scarification, is to be used in some acute Disorders, when the Body is to be relieved, and the Strength does not admit of an Evacuation of Blood from the Veins. And this Practice is not only less violent, but more safe, and never dangerous, tho' used when the Fever is at its Height, and when the Crudities abound. For this Reason, when immediate Danger attends the opening of a Vein, or when the Disorder is lodg'd in some of the more noble Parts of the Body, we ought rather to have recourse to Cupping, with Scarification, especially when we know, that it is a safe and gentle Method, and that violent Disorders must only be cured by violent Remedies." I have found this Caution of *Celsus* to be founded on Experience; for I have observed, that Disorders of the Head, such as Epilepsies, Vertigoes, Madness, and Convulsions of the Joints, have been increased, and their Paroxysms rendered more frequent, especially in young Persons, and those of delicate Constitutions, by a quick and pretty copious Evacuation of Blood from a Vein; whereas they were very able to bear the Extraction of Blood by Cupping-glasses, which greatly alleviated their Disorders. The Reason of this seems to be, that, in the Parts affected, the Violence of the Spasms, to which the Blood in the Vessels greatly resists, is increased, if that Blood is suddenly taken from them. In acute Fevers, when, in consequence of a Congestion of Blood in the Head, a Phrenitis is to be dreaded, it is, also, more safe and expedient to lessen the Quantity of Blood, by applying Cupping-glasses to the Occiput, than by opening a Vein in the Cubit. *Prosper Alpinus*, in his *Treatise de Medicin. Egypt.* informs us, that it was a common Practice among the ancient Physicians of that Nation, in all acute Fevers, where, from a Redness of the Face, and continual Watchings, they dreaded a Phrenitis, to scarify the internal Veins of the Nostrils, and, by tepid Baths of sweet Water, procure an Evacuation of Blood from them. But when, in any Disorder, instantaneous Relief is necessary, and a speedy Derivation of the Blood from the Part affected, in an apoplectic Fit, for Instance, a Peripneumony, an Inflammation of the Uterus, or a cardiac Syncope, proceeding from an Infarction of the Blood in the Heart, or in Cases where there is Danger of a Suffocation, Cupping-glasses are but of little Service; for 'tis rather expedient to make quick and speedy Evacuation of Blood, by making a large Orifice in some proper Vein near the Part affected.

Cupping-glasses are to be used, when, in consequence of Blood or Serum, stagnating in some external Part, Pains, Tumors, Inflammations, or other Disorders, are produced. This Doctrine is confirmed by *Celsus*, in the former of the Passages before-quoted from him; for the Use of Scarification is either evacuator or derivatory; the former, in order to diminish the Plethora; and the latter, in order to extract the corrupted and impacted Matter. Many of the Antients, and especially among the *Egyptians*, denied, that Cupping was of any Service in order to remove a Plethora; and, for that Reason only, applied Cupping-glasses to certain Parts. But when these are applied to any Part of the Body, such as the Back, Arms, Thighs, or Legs, and the Incisions made frequent and deep, twelve Ounces of Blood are often evacuated, of the same Weight and Consistence with that which is taken from the Veins; for I have often convinced myself of this, by drying the Blood extracted by Cupping-glasses, and found three Parts fluid to one of the solid, as in the Blood taken from the Veins; so that it may justly be class'd among the vulgar Errors of Medicine, to affirm, that the Blood, extracted by Cupping-glasses, is thinner than that obtained from the Veins. However, in order to evacuate and divert the peccant Matter, Cupping is preferable to Venesection; for I remember some Instances, where, in violent Pains of the Scapulae, Pains and acrid Defluxions of the Eyes, a Gutta Rosacea, erysipelatous Swellings of the Head, Venesection in the Feet or Arms, was of no manner of Service; but Scarification in the Neck, Occiput, and behind the Ears, and the Application of Cupping-glasses to the Back, afforded great Relief. *Prosper Alpinus*, in his *Treatise de Medicin. Egyptior.* informs us, that in Pains and Defluxions of the Head and Eyes, Ophthalmias, Lippitudes, and in order to procure Sleep, the *Egyptians* applied Cupping-glasses to the Occiput, Neck, and behind the Ears, and, by profound Scarifications, extracted the Blood, but first ordered a Vein in the Arm to be opened. This Advice is carefully to be followed in plethoric Patients, even where the Veins of the Face or Nostrils are to be scarified in violent Pains of the Head, or Madness, lest Space being afforded, a greater Afflux of Blood to these Parts should be excited. In order to prevent Gout-pains, Scarification made in the Soles of the Feet, every Month, is of great Service. And *Cardan.* in *Lib. de Art. Parv.* recommends Scarification under the very Paroxysm of the Gout. And *Platerus*, *Lib. 2. Prax. Med.* confirms this Doctrine, by giving us some Instances of Persons cured by this means. Besides, *Severinus*, in his Book *de Efficac. Medic. Lib. 1.* greatly recommends the Use of Scarification, in order to prevent the spreading of a Sphacelus, and cure malignant Ulcers. *Galen*, also, in his *Treatise de Sang. Missio.* greatly recommends Scarifications of the Legs in Suppressions of the Menfes and Hemorrhoids, which may be, also, used in those who have an Aversion

sion to Venesection; who, from a languid Strength of the Heart, are subject to Faintings; or those who, on account of the Tenderness of their Age, cannot bear a sudden Extraction of Blood from an opened Vein.

Blood may be, also, extracted from the Body by Leeches, which are greatly commended by some Physicians. Tho' this Method seems to have been little known to the most antient Physicians; yet *Pliny*, in *Hist. Nat. Lib. 32. Cap. 10.* speaks of them thus: "The Uses of Leeches for extracting Blood are various, and the same with those of Cupping-glasses, which are to relieve the Body, when oppressed with a Redundance of Blood, and to open the Pores." Among the *Arabians*, *Rhazes* knew the Use of Leeches; and, among the Physicians of the last Age, *Zacutus Lusitanus*, *Amatus Lusitanus*, and *Mercatus*, greatly commend the Application of them, especially in those Disorders which are generally incident to the Head, such as the Gutta Rosacea, Pustules of the Face, and Head-achs, especially of the rheumatic Kind; as, also, in Vertigoes, Melancholy, Quinseys, and Tooth-achs, in which these Physicians applied them to the Occiput, Neck, and behind the Ears. Tho' I do not at all doubt of the Salubrity of the Evacuation of Blood made by Leeches, yet I have good Reason to suspect, that no greater Advantage is to be obtain'd from them, than from the Evacuation procured by Cupping with Scarification.

The Application of Leeches to the Anus in a Suppression of the Hæmorrhoids, and Disorders arising thence, is generally greatly recommended. This Method of extracting Blood from the Veins of the Anus, by the Application of Leeches, is, by some, preferred to others, in Disorders arising from a Suppression of the Hæmorrhoids; such as hysteric Symptoms, and in those Disorders which, according to *Hippocrates*, are terminated by the hæmorrhoidal Discharge, such as phrenetic, melancholic, hypochondriac, nephritic, and ischiadic Disorders; because these Diseases arise from Blood stagnating in the Vessels of the Intestines, which terminate in the hæmorrhoidal Veins; in consequence of which, this Blood is more easily evacuated, and the Part affected reliev'd, by applying Leeches to the Veins of the Anus, than if Blood was extracted from any other Parts of the Body. I cannot deny, but, in these Disorders, Leeches may be of some Use, especially if we may believe the Observations of *Zacutus Lusitanus*, *Amatus Lusitanus*, and *Mercatus*. But, whether an happier Effect may be produced from them, than from opening a Vein in the Foot, or from profound Scarifications in the Legs, I cannot assert, since I have not Experience to authorize me: For, in violent and inveterate Spasms of the Hypochondria, I have often seen Leeches applied without any Effect; I have, on other Occasions, seen them afford Relief for a time; and, by their Application to blind Hæmorrhoids, I have seen malignant Ulcers and Fistulas produced. Besides, there is Reason to doubt, whether Leeches draw the Blood from the Part affected, because they suck it from the external hæmorrhoidal Veins, the internal being concealed. Now the internal hæmorrhoidal Veins have little or no Communication with the intestinal Vessels, the mesaraic Veins, and the Ramifications of the Vena Portæ, in which, however, the Seat of spasmodic and hypochondriac Disorders is placed. But, in an hæmorrhoidal Discharge, the internal hæmorrhoidal Veins evacuate the Blood; for which Reason, if the Hæmorrhoids flow duly, and at proper Times, they afford great Relief in the Disorders arising from a Stagnation of Blood in the Ramifications of the Vena Portæ. *Hoffman*.

Phlebotomy, used in such a Degree as not to impair the Strength, produces the following Effects.

1. It diminishes the Redundance of the arterial and venous Humours.
2. For this Reason it renders the Resistance of the Fluids to be moved less.
3. In consequence of this, it lessens not only the Plenitude of the Vessels, but, also, their mutual Compression on each other.
4. Hence it restores a due Degree of Contraction, or Elasticity, to the preternaturally distended Vessels.
5. It rarefies the Fluids.
6. It attenuates the Humours.
7. It resolves the Juices.
8. It removes Obstructions.
9. It promotes the Circulation of the Blood, together with the several Secretions and Excretions so necessary to Life and Health.
10. It produces a Revulsion.
11. It refrigerates and cools.

Hence it removes many Disorders of very different Natures, and induces surprising Changes on the State and Condition of the human Body.

Phlebotomy is indicated as expedient,

1. By a Redundance, or excessive Quantity, of Blood.
2. By too powerful a Resistance made to the Action of the Heart by the Humours.
3. By a suffocated Motion of the Heart, in consequence of too humid a State of the Arteries, arising from a Redundance or Rarefaction of their Contents.
4. By the Motion of the Heart beginning to be suffocated, in

consequence of a preternatural Extension of the Vessels, by which their Elasticity is destroy'd.

5. By too great a Condensation of the Blood.
6. By too great a Concretion of the Parts of the Blood.
7. By too great an Inspissation of the Blood.
8. By the Signs of a violent and inflammatory Obstruction found every-where in the Body; the most considerable of which are Pain, Tumor, Redness, intense Heat, and Anxiety, accompanied with a Suppression of the Sweat, Spir, and Urine.
9. By too accelerated a Motion of the Humours through the Vessels; or, also, a too slow and languid Circulation of the Humours, arising from a Redundance of the Humours; a Plenitude, and preternatural Distention, of the Vessels; a Rarefaction, Attenuation, or Resolution, of the Humours; and Obstructions of the Vessels.
10. By too intense an Heat in all the Vessels.
11. By too violent an Impetus of the Blood forced into one particular Part, as in Hæmorrhages and Defluxions.
12. By epidemic Disorders, whose Natures are understood.
13. By the Age, the Sex, the Method of Life, and the Constitution, of the Patient.

14. By a Cacochymy: And,
15. Phlebotomy is indicated, when the Intention is to make Medicines enter the Vessels, to procure their due Mixture with the Fluids, and to augment their Efficacy in performing Cures of great Importance.

Phlebotomy is best and most advantageously performed,

1. By making a large Orifice with some cutting Instrument.
2. In a Vein that is disengaged, large, easily discovered, and remote from Arteries, Nerves, and Tendons.
3. By accelerating the Velocity of the Blood, whilst it flows, by means of a strong Respiration.
4. By the Motion of the Muscles contiguous to the opened Vein. And,
5. 'Tis most proper to perform Phlebotomy on Patients, whilst they lie in Bed.

That Phlebotomy may be the more happily and successfully performed, the Patient may be prepared for it,

1. By Frictions. And,
 2. By Fomentations.
- Phlebotomy is contra-indicated, and rendered improper,
1. By many chronical Disorders, in which there are many Obstructions, and only a very small Quantity of fluid Blood remaining in the Vessels.
 2. By Old-age.
 3. By particular Temperaments, or Habits, of Body.
 4. By the known Nature of any epidemic or endemic Disorder.
 5. By a Crisis already made in another manner.
 6. By the Deficiency of red Blood, and the consequent Weakness of the Patient. And,
 7. By recent Childbirth.

Hence 'tis obvious, that an irreparable Injury must be done to Mankind, by using Phlebotomy in all Cases, according to the Advice of *Leonhartus Botallus*; and by banishing it entirely from the Practice of Medicine, according to *Johannes Baptista Van Helmont*.

The Extraction or Evacuation of Blood from the hæmorrhoidal Veins is indicated,

1. By an atrabilious Habit of Body.
2. By Diseases accompanied with irregular and disorderly Workings of the Fancy.
3. By a Suppression of the usual Discharge of Blood from these Veins.
4. By an Eruption of Blood from other Parts, which was before more happily evacuated from the hæmorrhoidal Veins.

Blood is evacuated from the hæmorrhoidal Veins,

1. By softening these Vessels by an emollient and warm Fomentation prepared of Water, Oil, Honey, and other emollient Ingredients; and applied by way of Clyster, Vapour, or Fomentation.
2. By opening these Vessels by Friction, with rough Substances, or by means of Leeches. And,
3. By the Use of Preparations of Aloes.

Scarifications act by stimulating, and by evacuating. Hence we are enabled thoroughly to understand the Action of Leeches.

But Setons and Fontanels stimulate with less Pain, agitate the nervous System, evacuate Serum, and procure a Vent, or Discharge, for preternatural Repletion.

Hence we may learn in what Parts, and on what Occasions, these are indicated.

Stimulating Medicines, or such as create Pain, Heat, and Redness, act by procuring Motion to the Nerves, and by determining Blood to particular designed Parts.

Hence they undoubtedly perform an unconceivable Number of happy Effects, by the known Necessity of which they are, also, indicated.

Stimulating Medicines are generally reduced,

1. To highly adhesive, and, at the same time penetrating Droppings, applied warm in the Form of a Plaster, and torn off, repeating

peating this, till the Part affected becomes red, tumid, and hot. The Ingredients proper for these Dropaxes are, Pitch, Oil, Bitumen, the Ashes of Twigs of Vines, Galbanum, Pepper, Pellytory of *Spain*, Sal Gemmæ, and Sal Ammoniac.

2. To gentle Sinapisms, called *Phanigmi*, applied by way of Cataplasm, and left till Redness, Heat, Itching, and Tumor, appear in the Part. The Materials for these are Mustard, Bryony, Garlick, Onions, Water-creffes, Squills, Euphorbium, Crow-foot, and the deadly Carrot.

3. To Velicatories, which are only stronger Sinapisms used in the same Form, but producing more violent Effects. The Diversity only consists in the augmented Quantity of the acrid Substances. Thus, for Instance, three Parts of Figs, mixed with one Part of acrid Substances, yield a Phœnigmus; one Part of Figs, mixed with one Part of acrid Substances, yields a Velicatory; and one Part of Figs, mixed with three Parts of acrid Substances, yields a strong Velicatory.

4. To the potential Caustic, applied either in the Form of a Poulrice, or with Lint. The Materials for this are Crow-foot, the Esula, the Tithymalus, fixed alkaline Salt, alkaline volatile Spirits, and Salts. The Effects produced by this Species of Remedy are Inflammation, and an Eschar. And,

5. To the actual Caustery, which is ignited Iron. *Boerb. Inst.*

Phlebotomy, or Bleeding by the Veins, is performed by making an Incision in a Vein, with a fine sharp-pointed Instrument, or Lancet, by which as much Blood is taken away, as may be proper for restoring or preserving the Health of the Patient.

This Operation may not improperly be called Venesection, and is not only extremely beneficial, but of a very antient Date, having been commended and practised about three thousand Years, as we learn from the Writings of *Hippocrates*, *Celsus*, and other antient Authors upon Surgery. Yet some Physicians, both antient and modern, such as *Erassistratus*, *Paracelsus*, *Helmont*, *Portius*, *Bontekoe*, *Gebema*, and others, have asserted it to be a most pernicious and unlawful Operation, and have termed the Practisers of it no less than the Destroyers and Butchers of Mankind. But Experience shews us, that all their Objections are trifling and unjust; and that there is no Remedy in the whole Art of Medicine, more ready, or more serviceable, in curing or preventing the generality of Diseases, than Phlebotomy. Some relate, that Physicians took the Hint of this Operation from the *Hippopotamus*, or Sea-horse, who, at certain Seasons, used to open a Vein with a sharp-pointed Reed. See *Polydore Virgil de Rer. Inventor.*

Bleeding, according to the vulgar Opinion, is a very easy Operation. In some Persons I own that the Veins are so large and conspicuous, that they may be opened by Novices, without Danger or Difficulty. But, in others, they are so small, or so deeply seated, that they cannot be discovered by the most expert Surgeon without Difficulty, nor opened without Danger. For the Arteries, or the Nerves and Tendons adjacent to the Veins, are very liable to be wounded by the Lancet; a Misfortune which is generally attended with violent Pains, Convulsions, Inflammations, profuse Hemorrhages, Aneurisms, Gangrenes, and sometimes a most miserable Death; and, therefore, this Operation, as well as others, requires Caution and Attention, since the Reputation of young Surgeons, especially, may suffer as much by a timorous Introduction of the Lancet, so that the Blood follows not, as when, by affecting to perform easily and expeditiously, a Misfortune should ensue.

An expert Phlebotomist should have an active, gentle, and steady Hand, a clear Sight, and an intrepid Mind; for, without these Qualifications, he will be subject either to miss the Vein, or to occasion some Mischief, which may be fatal to the Patient. This is the Reason, why the Dexterity of Surgeons, in Bleeding, gradually declines, as they advance in Years; for, as Age increases, the Eyes become weak, and the Hands unsteady.

The Instrument now commonly used in opening a Vein, is called a Lancet, and is represented in *Tab. XXII. Lit. A.* and *Tab. XXXII. Fig. 5.* A Surgeon should always be provided with several of these Lancets, of different Sizes, and in good Order. Some Surgeons in *Germany*, particularly in *Franconia*, *Bavaria*, and the *Lower Saxony*, bleed with a Fleam (see *Tab. XXXII. Fig. 3.*) in this manner: With the Fingers of one Hand, they hold the Part B, and place the Point A upon the Vein; with a Finger of the other Hand, they strike the Part C, by which means the Point pierces the Vein, as Farriers do in bleeding Horses. Others use a sort of elastic Fleam, called by the *Germans*, *Schnapper*, or *Schnapperlein*, (see *Fig. 4.*) thus: Having raised the Point A, they apply it to the Part; and, by pressing at B, force down the Point into the Vein: Others use an Instrument shaped like a Dart. But, as these Instruments cannot be always adapted to the different Position and Figure of the Veins of different People, the Lancet seems to be more proper; tho' many of the *Germans* are very expert in the Use of their *Schnapper*.

Tho' Phlebotomy is used in various Parts of the Body, as in the Arm, Hand, Foot, Forehead, Temples, Neck, Tongue, Penis, and others; yet, as it is most frequently performed in a Vein of the Arm, which is near the Joint of the Elbow, we shall, therefore, begin with this Operation, and enlarge a little upon it.

OF BLEEDING IN THE ARM.

It is commonly known, that Bleeding in the Arm is performed on the Veins placed on the Inside of the Cubit. In this Operation several Circumstances are to be considered: 1. What is to be done preparatory to the Bleeding. 2. How the Operation itself is to be performed. 3. and lastly, What is necessary to be done, in consequence of it. With regard to the preparatory Circumstances, the Surgeon must necessarily have in Readiness a Linen Fillet, about an Ell in Length, and of the Breadth of two Fingers. 2. Two small square Compresses. 3. Porringers, or Vessels, proper for receiving the Blood. 4. A Sponge, with warm Water. 5. A small Quantity of Vinegar, Wine, or *Hungary Water*, for relieving the Patient, if he should be inclinable to faint. 6. Two Assistants, not fearful, one to hold the Porringer, and the other to bring what may be wanted. 7. A small Wax-candle, when this Operation is necessary to be performed in the Night, or in a dark Place. 8. The Patient should be placed in a Chair a little reclined, or, if timorous, in a Bed, that he may not be in Danger of dropping off his Seat in a Swoon. 9. Lastly, The Surgeon should take care, that no Cloaths, and the like, should lie in the Way. The Patient should banish all Concern, and be by no means apprehensive of any Danger from the Operation. The Operator should be as expert in performing with his Left, as with his Right Hand; for the Vein in the Right Arm must be opened with the Right Hand, and in the Left Arm, with the Left Hand. Some will insist on being bled in the Left Arm; and sometimes the Vein in the Right is not conspicuous, or proper to be opened.

With regard to the Operation itself, though it may be performed by a single Puncture, yet many Circumstances are necessary to be observed, for the better Execution of it. The Surgeon should narrowly inspect the Arm whence Blood is to be taken, in order to observe the Veins; then he must take hold of the Arm, and extend it towards his Breast. The Sleeve being tucked about an Hand's-breadth above the Elbow, he should make a tight Ligature about three Fingers-breadth above the Elbow, with a Fillet of the Breadth of a Thumb and a Yard in Length, rolling it twice, and fastening it with a Knot (See *Tab. XXXII. Fig. 1. D*); by which means the Veins, being compressed, and the Reflux of the Blood obstructed, are swelled, and rendered more conspicuous. This Fillet is generally made of a Piece of thin scarlet Cloth, though any other Colour may do. The Surgeon may now let go the Arm, and, taking out his Lancet, open it to an obtuse Angle, and hold it in his Teeth, at the Joint A, *Tab. XXXII. Fig. 5.* In the mean while the Veins grow more turgid, and more conspicuous. The Surgeon must now again lay hold of the Arm, and extend it towards his Breast, the Assistant being ready with the Porringer, and in the most convenient Situation, for receiving the Blood. The Surgeon must next examine, which Vein is most conspicuous, and, therefore, most proper for Incision. It is necessary to be observed here, that three principal Veins appear in the Arm: The first is called the *Vena Cephalica*, and lies towards the exterior Part of the Arm; the second is termed the *Basilica*, and is found towards the interior Part of the Arm; see *Tab. XXXII. Fig. 1. A*; it is, also, denominated, in the Right-arm, *Hepatica*, and, in the Left, *Splenetica*, as at B; the third, being situated in the Middle, obliquely, between the other two, is named *Mediana*, as at C. The *Mediana* and *Basilica*, being larger, generally emit the Blood more copiously, than the *Cephalica*, but they are opened with greater Danger; for, under the *Basilica*, lie the great Artery of the Arm, and the Brachial Nerve; and, under the *Mediana* is a Tendon, of the *Musculus Biceps*. But, as these two are most conspicuous, they are most frequently opened; though it is safer, especially for young Surgeons, to make the Incision in the *Cephalic Vein*, or, at least, in the *Median*. But, when the Veins are so situated, that only one of them can be made to appear, then there is no Choice left, and there is nothing to be depended upon, but the Skill and Care of the Surgeon.

When the Vein is already pitched upon, the Incision must be made where it appears largest and conspicuous. If any Marks of former Wounds remain, it will be proper to open the Vein rather below, than above the Cicatrix; which generally straitens the superior Part. For this Reason, whenever you open a Vein for the first Time, begin as high as you can; by which means you may gradually descend in repeated Bleedings.

Before the Lancet be applied, if the Veins do not sufficiently rise, it will be proper to stroke the Arm from the Hand upwards, which will compress the Blood towards the Elbow, and make the Veins become more turgid. If the Incision is to be made in the Right Arm, the Surgeon is to hold the Arm in his Left Hand, in such a manner, that his Thumb may be placed upon the Vein which is to be opened, in order to prevent the Reflux of the Blood, and the Vein from sliding out of its Place.

The

The Vein being thus firmly held, the Surgeon must keep his Eyes fixed upon that Part, where he intends to introduce the Lancet. Then, taking the Lancet out of the Mouth with his Right Hand, he must hold it about the Middle of the Blade, between his fore Finger and Thumb, suffering the other Fingers to rest gently upon the Patient's Arm, that his Hand may not slip.

Then the Lancet must be softly and carefully pushed by the fore Finger and Thumb, till it penetrates the Coats of the Vein; and the Point must be immediately turned a little upwards, by which the Wound may be enlarged, and the Discharge of the Blood may soon be rendered plentiful. Those Orifices are reckoned most convenient, whose Length is equal to twice the Thickness of the Back of a small Knife. The Lancet must be introduced, not with Rashness, lest, by penetrating too deep, an Artery, a Nerve, or Tendon, should be wounded; nor with Timidity, lest you should only divide the common Integuments, without reaching the Vein. The Vein may be opened in three Directions: some make the Wound lengthwise, as at *Tab. XXXII. Fig. 2. A*; others make it transverse, as at *B*; but most Surgeons make it oblique, as at *C* and *D*. If the Incision is to made in the Left Arm, the Operator must hold the Arm in his Right Hand, and all must be done with the Left Hand, which was before proposed to be done with the Right. If the Fleam at *Fig. 3.* be used in this Operation, the Point *A* must be applied to the Vein; and, the End *B* being held in the Left Hand, the Point must be driven into the Vein by the Stroke of a Finger of the Right Hand. If the elastic Fleam is to be used, let the Point *A*, placed above the Vein, be raised towards the Hook *C*; by a slight Pressure at *B*, the Point is plunged into the Vein.

The Vein being thus opened, and the Instrument immediately drawn back, the Blood will either vigorously spring out, or flow gently. The Lancet must now be put into a Basin, and never thrown upon the Bed, lest it should be accidentally lost, or the Patient should wound himself by it. In the mean time, the Blood should be suffered to run, till a sufficient Quantity is discharged. But if it should stop too soon, as often happens from the Stricture of the Ligature above the Elbow, the Bandage may then be untied, or rather a little relaxed; by which means, the compressed Artery is again enlarged, and the Discharge of Blood is continued. If the Wound should be stopp'd by too great a Tension of the Skin, or by Fat, the Piece of Fat should be pressed back with the Finger, or a warm Sponge, or the Skin may be relaxed by bending the Arm. If the Orifice should be obstructed by thick coagulated Blood, that Impediment may be removed by wiping the Wound with a Sponge dip't in warm Water.

That the Patient's Arm may not tire by being long extended, the Surgeon ought to support it about the Elbow. A small Stick, or Cylinder, should be put into the Patient's Hand, which he should continually turn round, by this Method accelerating the Motion of the Blood towards the Wound; which will be further promoted, if the Patient urges a little voluntary Cough. The Attendants should be ready, with empty Vessels for receiving the Blood, to remove such as are filled, and to administer the Compresses, Bandages, Cordials, and other Necessaries.

The Quantity of Blood to be taken away must be regulated by the Physician, according to the Nature of the Disease, the Temperament, Strength, and other Circumstances, of the Patient. But, when the Surgeon attends his Patient without a Physician, he may determine the Quantity himself, according to the Nature of the Disease, the Strength, Age, Constitution, and other Circumstances, of the Patient. If the Patient retains his natural Complexion, and neither grows languid nor faint, the Blood may be suffered to flow longer, than in those who are soon affected with Paleness and Swooning.

When a sufficient Quantity of Blood is discharged, the Bandage above the Elbow must be removed; and the fore and middle Finger of the Left Hand must be gently drawn over the Orifice, stroking the Skin on each Side of the Wound; by which means the Lips of the divided Vein are more easily pressed together. Then let the Surgeon take the smaller Compress in his Right Hand, and apply it to the Wound, having first removed the Fingers of his Left Hand, that the Blood, between the Vein and the Skin, may be discharged, before the Compress be applied. Over this, lay another larger Compress, which must be retained with the Thumb, till the Whole be secured by the Bandage.

The Patient's Sleeve may now be drawn down over the Arm, which he should keep bent towards his Breast; and the Patient should be ordered not to use any Motion too soon, lest a new Hemorrhage, Inflammation, or Suppuration, should be occasioned. If the Patient should faint away after the Operation, it will be proper to apply to the Nostrils and Face some Cordial Water, as *Hungary Water*, or *Vinegar*, or *Wine*; or cold Water may be sprinkled on the Face; or, if in the Summer-

time, the Window may be opened, and the Spirits and Strength of the Patient restored by the Admission of fresh Air. A small Glass of Cordial Water, or generous Wine, should, likewise, be given to the Patient.

It is customary for the Surgeon, or the Physician, if there is one present, to look at the Blood, and give his Opinion of it. In this Case, the Surgeon should never discourage the Patient, whether the Blood be good or bad, or whether he retains his Senses, or falls into Faintings. Favourable Accounts here greatly contribute to the Recovery of Health; but to dishearten the Patient by a severe Prognostic, may occasion very fatal Consequences. If, therefore, the Blood appear florid, the Surgeon should declare it a Sign of immediate or approaching Health; if the Blood be of a bad Colour, or vitiated, he must pronounce, that the Bleeding will be extremely serviceable. If the Patient should fall into a Swoon, the Surgeon intimates, that this Weakness is an Evidence of the speedy and salutary Effects of the Remedy. The Blood should be set by in a cool Place, till the Physician, or Surgeon, renews his Visit.

If, after Bleeding, the Patient should be affected with Thirst, he may be allowed to quench it, especially if he can drink small thin Liquors. It is a Custom among the *French*, immediately after Bleeding, especially if the Remedy is used to prevent Disorders arising from the Heat of the Blood, to take a Draught of cold fresh Water: Which Method, in hot Habits, may be very serviceable; but in cold, infirm Constitutions, very prejudicial; for whom a little warm Tea, or Coffee, would be much more proper. The Patient may either be forbid or allowed to sleep after the Operation, according to Circumstances. If the Patient used Bleeding only by way of Prevention, it would certainly be more proper for him to divert his Drowsiness by some agreeable Conversation, Amusement, or Exercise; for, if Sleep be indulged, the Bandage may slip, and a violent Hemorrhage be occasioned. But those who are extremely weak, or labour under some Indisposition, should by no means be hindered from Sleep, especially if they have been troubled with tedious Watchings; for, by Sleep, the weak wearied Body is often wonderfully refreshed. In the mean time, an Attendant should carefully observe, that the Bandage continues fast, or, if it should slip, to stop the Flux of Blood, by compressing the Wound with the Fingers, till the Surgeon be called.

If, at the next Visit, the Blood, as is usual, should be again brought to the Surgeon, and his Opinion of it asked, he should, as we before observed, say nothing, but what may tend to encourage the Hopes of the Patient. The Surgeon should, likewise, inspect the Dressing; and, if the Bandage be relaxed, he should untie it, and apply it afresh; if the Compresses adhere to the Wound, they should not be removed; but, if they are loose, they should be again applied, and secured by the Bandage; which, being suffer'd to continue a Day or two, till the Wound be healed, may then be taken away. Some People, of an hot Constitution, will have the Blood run into cold Water, imagining, that by some secret Sympathy the Heat of the Blood may be by this means allayed. But, however trifling and false such a Notion may be, yet as it may be complied with without Danger, and as it may have some good Effect upon the Imagination of a credulous Person, it ought not to be rejected, but permitted.

OF BLEEDING AT THE HAND.

Phlebotomy is sometimes practised on two Veins of the Hand, one of which is called the *Salvatella*, and the other *Cephalica*. The *Salvatella* extends on the exterior Part of the Back of the Hand towards the little Finger, being sometimes named *Splenicæ* in the Left Hand, because many antient Physicians believed, that the Opening of it was beneficial in Diseases of the Spleen. The *Cephalica* runs between the fore Finger and Thumb, and was so denominated by the antient Physicians, because they fancied, that Bleeding from it was an excellent Remedy against Disorders of the Head. Although it is plain, that Bleeding at the Hand is more difficult than in the Arm, and that all these Notions of the Antients are without Foundation, yet, since the Effect is the same with that of Bleeding in the Arm, it may be sometimes proper for the Operation to be performed on the Hand; especially if the Patient be prepossessed with a good Opinion of that Operation; or if the Veins of the Hand are more conspicuous, than those of the Arm. Some Women, too, in the last Months of their Pregnancy, or near the Time of their Delivery, prefer Bleeding at the Hand, which, they imagine, does not so much debilitate the Fœtus, as in the Arm.

In this Operation, therefore, it is proper for the Patient to bathe and rub his Hand in warm Water, that the Veins may swell, and become conspicuous. The Bandage must be fix'd immediately about the Carpus, to keep the Veins turgid; then the Hand must be dried, and the Incision made in the most convenient Place, as was before directed. If the Blood flows but slowly, the Hand must be again dipped in warm Water, and

continue

continue there, till a sufficient Quantity is discharged. Then the Hand may be dried, the Wound contracted by the Fingers, and the Compresses and Bandages applied as above directed.

OF BLEEDING IN THE FOOT.

Bleeding in the Foot is a very antient Operation, which has been observed by Physicians to be a most efficacious Remedy for various Diseases of the Head and Brain, and, also, against those Disorders which proceed from an Obstruction of the Menfes, or Hæmorrhoids. Hence the Veins of the Feet have long ago been called *Cephalica*, and *Saphena*. The Vena Cephalica extends towards the great Toe; and the Saphena towards the lesser Toes. But, notwithstanding the Difference of the Names, in Bleeding, they have both the same Effect; and, therefore, I think, the more conspicuous of the two ought always to be preferred. However, when the Veins of the Feet do not sufficiently appear, it will be more proper to open a Vein about the Ancles, the Calf of the Leg, or the Knees, as I have frequently done, especially as the Nerves and Tendons of those Parts are not so liable to be wounded, as those of the Foot. But it is proper to advise the Surgeon here, to be cautious in bleeding single Women at the Feet, without the Advice of a Physician; for some, under the Pretence of an Obstruction of the Menfes, endeavour by this Method, to procure a Miscarriage.

In order to facilitate the Performance of this Operation, let the Patient bathe his Feet in warm Water, till the Veins become tumid; and the Surgeon should choose that Foot, in which the Veins are most conspicuous. The Bandage should be tied about the Breadth of two Fingers above the Ankle; and, whilst the Surgeon is taking out his Lancet, the Patient should keep his Foot in the warm Water, in order to increase the Rising of the Vein. Then the Surgeon, kneeling on one Knee, and having dried the Foot, lays it on the other Knee, or on a Stool, or on the Edge of the Vessel which holds the Water. He then takes the Foot in his Left Hand, and keeps the Vein fixed, as was directed for bleeding in the Arm. If the Veins appear not sufficiently below the Ancles, it will not be improper to open them above, or in the Calves; and then the Ligature must be made at the Distance of the Breadth of two Fingers above the Place of Incision, and the Veins may be rendered conspicuous by the Method already directed. We must, also, observe, with regard to the Surgeon's Posture, that he may place himself before the Patient on a low Seat, and put the Foot on either Knee. When the Spring-steam is used, as is often done in *Germany*, it will be then most convenient for the Patient to put his Foot on a low Stool.

The Vein being thus opened, the Blood may be received into proper Vessels; and, if the Blood does not flow freely, let the Foot be again put into the warm Water, which will, also, prevent the Blood from congealing and stagnating in the Wound; an Accident which frequently happens. When a sufficient Quantity of Blood has been thus discharged, which may be discovered, not only from the Time, but, also, from the Quickness or Slowness of the Evacuation, from the Redness of the Water, and especially from the Strength of the Patient, the Orifice is to be stoppt by a proper Compress and Bandage. The Advantages resulting from this Operation may be seen in *Verdus*, *Caspar Cadera de Heredia*, a *Spanish* Physician, *Stahl*, and others. These Authors have been opposed by *Hequet* of *Paris*, in his Book *sur la Saignée du Pied*, and again defended by *J. Bapt. Sylva*, also, a Physician of *Paris*, in his *Treatise de l'Usage des différentes Sortes de Saignées*, *Amsterdam*, 1729. He was answered in 1730, by *Chevalier*, a Physician, and, also, by *Quesnay*, a Surgeon, both of *Paris*.

OF BLEEDING IN THE FOREHEAD, TEMPLES, AND OCCIPUT.

Some are of Opinion, that Bleeding at the Veins of the Forehead and Temples is more efficacious and expeditious in the Cure of violent Pains of the Head, of Vertigos, Melancholy, Madness, Deliriums, and the like obstinate Disorders of the Head, than the like Evacuation by Veins more remote from the Part affected; judging, that the morbid Matter may more readily be extracted by the Veins of the Forehead and Temples, by reason of their Vicinity. But, in my Opinion, the Situation of these Veins contributes very little towards hastening the Cure, because they have little or no Communication with the internal Parts of the Head, and they generally yield but a small Quantity of Blood. The Jugular Vein seems to me much better adapted to this Purpose, as it is situated very near the Veins of the Forehead and Temples, which terminate in it, as it is larger and more conspicuous, and as it communicates with the internal Parts. But if this Operation must be performed, either by Order of the Physician, or at the Request of the Patient, the following Directions are necessary to be observed. Let an Handkerchief or Napkin, be drawn tight

about the Neck; by which means the Jugular Vein being compressed, those Branches of it may become more conspicuous. The Vein being open'd, the Patient should incline his Head downwards, that the Blood, which is discharged slowly and gently, may not flow into his Eyes or Mouth. A sufficient Quantity of Blood being evacuated, unless it stops spontaneously, as is often the Case, let the Wound be compressed with the Fingers, the Forehead and Face be washed, and afterwards let one or two Compresses, with a Bandage, be properly applied.

Bleeding at the occipital Veins, which communicate with the lateral Sinuses of the Dura Mater, is proved, both by Reason and Experience, to be very beneficial in many Distempers of the Brain, especially when it is necessary to avert and evacuate the Blood from that Part. The celebrated *Morgagni* particularly recommends it in obstinate lethargic Disorders, by Cupping and Scarifications; and *Zacutus Lusitanus* gives an Instance of an desperate Apoplexy being cured by Cupping, and deep Scarification in the Occiput. *De Medic. Princip. Hist. Lib. 1. Hist. 33.* If the Incision is to be made with a Lancet, the same Method is to be used, as in opening the Veins of the Forehead and Temples.

OF BLEEDING AT THE GREATER CANTHUS OF THE EYE.

Anatomists have observed, between the Nose and the greater Canthus, on each Side of the Face, a Vein, proceeding partly from the Eye, and partly from the Forehead, which, like the Frontal Vein, descends to the external Jugular Vein. Bleeding in this Vein has been recommended by almost all Oculists, and particularly *Dionis*, as extremely serviceable in violent Inflammations of the Eye; tho', in my Opinion, with no better Reason than in the Veins of the Temple and Forehead. But, when this Operation is to be performed, let the Ligature be made about the Neck, as before directed, and let the Lancet be carefully introduced into the Vein. The Patient ought, likewise, to hold down his Head to prevent the Blood from flowing into his Mouth; and, as much Blood being discharged as may be necessary, apply a thick triangular Compress with proper Bandages. For Bleeding in the Eye itself, see *OCULUS*.

OF BLEEDING AT THE JUGULAR VEINS.

The Operation of Bleeding at the external Jugular Vein, in violent Inflammations of the Neck or Quinsy, in Inflammations of the Brain, in Madness and Melancholy, in Inflammations of the Eyes, in Apoplexies, Head-achs, lethargic Disorders, and violent Diseases of the Head, is very antient; and many of the Moderns have recommended this Practice, because, by it, the violent Influx of the Blood into the Part affected, and the Collection and Stagnation of the Humours, may be most expeditiously prevented. Besides, there is no Danger in the Operation, as these Veins, extending on each Side of the Neck from the Head to the Clavicles, lie immediately under the Skin, and are sufficiently large and conspicuous. But, before the Incision, it will be proper to make a Ligature tighter than ordinary about the lower Part of the Neck, which must be straitened by the Patient, or an Assistant, till the Veins become turgid; or, a loose Bandage being thrown about the Patient's Neck, it may be drawn down towards his Breast by himself, or an Assistant. By this means the Jugular Veins, being compressed on each Side, will become more turgid, without obstructing Respiration.

When the Veins are sufficiently tumid, that is to be chosen which is most conspicuous, when the whole Head or Fauces are affected; but when the Disease lies only on one Side of the Head, or in one of the Eyes, that Vein is, in my Opinion, to be preferred, which is situated on the morbid Side. A sufficient Quantity of Blood being drawn, the Ligature must be removed, the Wound compressed by the Finger, and Compresses with a circular Bandage must be applied; and thus the Bleeding is stoppt without any Danger of a fresh Hemorrhage, as I have often experienced. It is, indeed, true, that the Patient is very subject to faint in this Operation; but that Circumstance is attended with no bad Consequence. *Tralles*, a learned Physician of *Breslaw*, published in 1735. an excellent Treatise on the Usefulness of this Operation.

THE METHOD OF BLEEDING IN THE VENÆ RANINÆ.

Bleeding in those Veins, under the End of the Tongue, is by some esteemed beneficial in a Quinsy, or Inflammation of the Neck, especially if a Vein has been before opened several times in the Foot, Arm, or Neck; for, by these means, the inspissated and stagnant Blood is gradually discharged. The Operation may be thus performed: Make a Ligature about the Neck, as was already directed; then, raising the End of the Tongue with the Left Hand, carefully open both these Veins with the Lancet, one after another; for one of them will never discharge

P H L

discharge a sufficient Quantity of Blood. When it becomes necessary to stop the Hæmorrhage, unbind the Ligature, and it commonly ceases spontaneously; but, if it should still continue, let the Patient hold a little Vinegar, or *Pontac* Wine, in his Mouth; or, if necessary, apply to the Wound a little Vitriol, or Alum, or a Compress dipt in some astringent Medicines, till the Bleeding stops. But there is seldom any Danger of a violent Hæmorrhage here; and, unless the Discharge be copious, in Diseases of the Fauces, little Effect can be expected from it.

THE METHOD OF BLEEDING BY THE VEINS OF THE PENIS.

In some violent Inflammations of the Penis, this Operation has a wonderful Effect, and is sometimes more successful than almost every other Remedy. Introduce your Lancet about the Middle or back Part of that large Vein, which runs along the superior Side of the Penis, and is already sufficiently tumefied from the Nature of the Disorder; let the Evacuation be continued, till the Penis becomes flaccid, or till a Quantity is discharged proportionable to the Degree of the Disease. Then the Wound may be closed with the Finger, and Compresses are to be applied, with a Bandage proper for the Penis. Particular Care must be taken in this Operation, to avoid wounding the adjacent Nerves and Arteries, which might produce fatal Effects; and not to make the Bandage too tight, which might increase the Inflammation.

OF THE ACCIDENTS WHICH ARISE FROM BLEEDING.

THE METHOD OF TREATING AN ECCHYMOSIS.

An Ecchymosis is an Extravasation of the Blood, from the Vein, between the Flesh and the Skin. Of this Disorder there are different Degrees; as when a great Part of the Arm is so violently affected, that it not only becomes livid, black, and swelled, but is, likewise, affected with Inflammations, Pains, Suppurations, and a Gangrene.

This Disorder is produced, either when the Surgeon has cut the Vein entirely through, or, which is more frequently the Case, when the Patient has used some violent Exercises, especially of the wounded Arm, too soon after the Operation; for by these means it may very readily happen, that the Blood may be extravasated from the wounded Vein, between the Flesh and Skin, more or less in proportion to the Violence of the Exercise.

When the Quantity of extravasated Blood is but small, little Danger is to be apprehended; for the stagnant Blood may be easily dissipated, by applying a Compress dipt in Vinegar and Salt, or in Spirit of Wine. Sometimes the Blood degenerates into Pus, and then the Suppuration should be promoted by a Diachylon-plaister; and when the Matter is once ripened, it will spontaneously make its Way by Degrees, without Incision. As long as any Pus appears to be discharged, it should be daily expressed with the Fingers, and the Wound may be healed with a Diachylon-plaister.

If the Quantity of stagnating Blood be very considerable, there is little or no Hope of a Dissipation: For the vitiated Blood generally degenerates into a violent Inflammation and Suppuration, and sometimes into a Gangrene. In order to prevent these Consequences, let the Surgeon make frequent Incisions in the livid Part, for evacuating the stagnating Blood. He may then apply a Diachylon-plaister, or Fomentations proper for Contusions, or Phlegmons. But if, as often happens, a violent Inflammation, or even a Gangrene, affects the Arm, it ought to be frequently scarified, and digestive Fomentations, or Cataplasms, should be applied. But, in these Cases, it is often necessary to take a sufficient Quantity of Blood from another Part of the Body, and to exhibit resolvable Medicines internally, till the Violence of the Inflammation, or the Gangrene, abates; or till it entirely ceases.

THE METHOD OF TREATING A NERVE OR TENDON WOUNDED IN BLEEDING.

A Nerve or Tendon may be certainly known to be wounded in Bleeding, if the Patient, at the time of Incision, feels most acute Pains, so that he can scarcely refrain from a vehement Outcry; especially if the Pains continue, and are followed by Tumors, Inflammations, Spasms, or, likewise, a Rigor and Convulsions of the Limb: Which Symptoms, if not timely relieved, are succeeded by most dangerous Convulsions, a Gangrene, and Death itself.

Among the various Methods of remedying this Malady, that seems the most excellent, which was formerly performed by *Paré* on the French King *Charles IX.* No sooner had the King signified his Pain, by crying out at the Instant that the Vein was opened, than *Paré* justly suspected, that a Nerve had been wounded. Immediately the Arm began to swell, and grow rigid, with the Acuteness of the Pain. Hereupon the

P H L

King's Physicians, in Consultation with *Paré*, agreed upon the following Method: They first injected into the Wound, Oil of Turpentine with rectified Spirit of Wine; then they applied to the whole Arm the Emplastrum Diachalciteos, dissolved in Vinegar and Oil of Roses; then they used the expulsive Bandage, beginning at the Hand; and ascending gradually in continued spiral Turns to the Shoulder; by which means, the violent Impulse of the Blood, and the Inflammation, were not only abated, but the Pain, also, diminished by degrees. In order to complete the Cure, they applied to the Arm the following Cataplasim, till the Pain entirely ceased.

Take of the Meal of Barley; and Vetches, each two Ounces; of the Flowers of Chamomile, and Melilot, each two Handfuls; of fresh Butter, an Ounce and an half: Boil them in Soap-suds into a Cataplasim.

Thus, though the natural Activity of the Arm was impaired for three entire Months, yet it gradually recovered its former Strength.

However, it may not be improper, in this Method of Cure, to substitute, instead of the Oil of Turpentine, and Spirit of Wine, the *Peruvian* Balsam, or *Hungary* Water, which may be for some Days instilled into the Wound, till the Pain diminishes. As the Emplastrum Diachalciteos is rarely to be found in the Shops, in room of it, the Emplastrum Diapompholygos, or the Plaister of red Lead, may be used. But great Care must be taken, whilst the Remedies are preparing, that the Wound be not exposed to the Air. It will, therefore, be proper, immediately to apply any Sort of Plaister, which is the readiest, to the Wound, and to wrap up the whole Arm in Linen Cloths moisten'd in Oxycerate, which will both lessen the Inflammation, and defend the Wound from the Injuries of the external Air. If the Patient be of a vigorous plethoric Habit, Bleeding in another Part may tend to prevent the Inflammation. *Scultetus*, in *Uls.* 87. gives a certain Ointment, which he commends as an excellent Remedy in Punctures of the Nerves; where he, also, informs us, that he has successfully divided entirely, or cut through, some of these wounded Nerves. *Heister's Surgery.*

PHLEBOTOMUS. A Lancet, or a Fleam: Instruments used for Bleeding.

PHLEDONODES, *φλεδονόδες*. See **PHLEBODONODES**.

PHLEGMA, *φλέγμα*. Phlegm. Every Humour, says *Galen*, *Lib. 2. de Diff. Feb. Cap. 6.* which is both cold and humid, comes under the Denomination of *Phlegma*, "if we would speak in the Language of *Hippocrates*, and according to the usual Custom, not only of the ancient, but modern *Greeks*; or," as he says a little after, "if you please, you may call it *Scindapsus*." Of Phlegm there are four Species, the vitreous, sweet, acid, and salt: These are reduced by *Galen*, *de Diff. Feb. Lib. 2. Cap. 6.* to three. But, in his *Book de Plenitud.* he makes five Species of it.

Phlegma, also, in *Hippocrates*, as *Galen* says in his *Exegesis*, signifies not only a white and cold Humour, but, also, an Inflammation [*φλέγμων*]. Instances to this Purpose are innumerable.

Phlegmasia, *φλεγμασία*, in the same Author, signifies not only an Inflammation in the common, but is sometimes to be understood of the violent Heat excited by a Fever; as *Lib. de R. 1. 1. A.* But *φλεγμασίν τῷ ὀφθαλμῷ* is a puitous Sort of Urine, abounding with a gross and cold Humour.

Phlegmainon, *φλεγμαίνων*, signifies not only inflamed, but sometimes imports tumid, and increased in Bulk; as may be shewn from many Places in *Hippocrates*, in which *ἐκπαίρειν*, to extenuate, and *ἐκσπαιρύνειν*, to induce a Tumor, are set in Opposition: Many Instances of this Sense of the Verb may be given from the *Book de Locis in Homine. Focius*.

PHLEGMAGOGUS, *φλεγμαγωγός*, Phlegmagogue. An Epithet for such Cathartics as purge off Phlegm.

PHLEGMASIA, *φλεγμασία*. An Inflammation.

PHLEGMATIAE, *φλεγματίαι*. Persons abounding with Phlegm are thus called, by *Hippocrates*.

PHLEGMATORRHAGIA. *Salmuthus, Observat. 37. Cent. 1.* gives an Account of a Disorder, which he calls by this Name. This was a very considerable Flux of thin Phlegm from the Nostrils, which continued for three Days, and was cured by the Use of the Cephalic Pills.

PHLEGMONE, *φλεγμονή*. A Phlegmon, or Inflammation. See **INFLAMMATIO**.

PHLEGMONODES. Resembling an Inflammation.

PHLEPS, *φλέψ*. A Vein. But among the Antients it signified both the Arteries and Veins.

PHLIAE, *φλῖαι*, in the Scammum of *Hippocrates*, or other Machines of that Kind, are the upright wooden Posts, which are bored to receive the Ends of the Axes, and in which they turn. *Oribasius de Machinamentis, Cap. 24.* Or, as *Galen* explains

P H O

plains it, in his *Exegesis*, strait Pieces of Wood, fixed opposite to each other, like the Posts of a Door.

PHLOGINON, φλοσινόν. The Name of a liquid Collyrium, described by *Galen*, *Lib. 4. de C. M. S. L. Cap. 7.*

PHLOGISTOS, φλοσιστός. Inflammable. The Liquor called *Æther*, is called, also, *Phlogiston*, on account of its great Inflammability.

PHLOGIUM. A Name for the *Viola*; *tricolor*; *hortensis*; *repens*.

PHLOGODES, φλοσώδης. Of a Flame-colour, intensely red, inflamed.

PHLOGOEIDES, φλοσσειδής. The same as **PHLOGODES**.

PHLOGOSIS, φλόσσις. An Inflammation; or an Heat and Exultation of any Part, without an inflammatory Tumor. *Willis* speaks frequently of a Phlogosis of the animal Spirits; but, I am afraid, no just Idea can be framed of such a Phlogosis, till such time as we know, that animal Spirits really exist, and we are better acquainted with their Natures.

PHLOMIS.

The Characters are;

The Root is perennial; the Leaves thick; the Galea large, hollow, falcated; the Beard trifid, the middle Segment being large, broad, marginated, and extended beyond the Galea, which closely presses upon the Beard: The Calyx is a short, wide, pentagonal Tube, sometimes indented: The Seeds are oblong.

Boerhaave mentions eight Species of *Phlomis*; which are,

1. *Phlomis*; *Narbonensis*; folio *Hormini*; flore purpurascente. *T. 178. Marrubium, nigrum, longifolium. C. B. P. 230. Herba venti, Monspelienfis. J. B. 3. App. 854.*

2. *Phlomis*; fruticosa; *Salvia* folio latiore, & rotundiore. *Tourn. Inst. 177. Boerb. Ind. A. 160. Phlomis. Offic. Salvia fruticosa lutea latifolia, sive Verbascum sylvestre quartum Matthioli. Park. Theat. 51. Raii Hist. 1. 511. Verbascum latis Salviae foliis. C. B. P. 240. Verbascum Matthioli. Ger. 625. Emac. 767. YELLOW SAGE.*

It is cultivated in Gardens, and flowers in *June*: It is astringent, and reckoned among vulnerary Plants.

3. *Phlomis*; fruticosa; *Salvia* folio longiore, & angustiore. *T. 177. Verbascum sylvestre. Dod. Pseudo-salvia, fruticosa, minor, lutea, Verbasci foliis incanis. M. H. 3. 397.*

4. *Phlomis*; fruticosa; folio subrotundo, brevior, flore luteo. *Verbasculum, salvifolium. Alpin. Exot. 109. Pseudo-salvia, minor, Cretica, lutea. M. H. 3. 397.*

Dioscorides says, that the Flowers are good to dye Hairs of a Gold-colour; and that the Leaves cure Ambustions. *Galen* writes, that the Leaves are moderately drying, and digestive. *Prosper Alpinus de Plantis exoticis.*

5. *Phlomis*; *Samia*; herbacea; folio *Lunariæ. T. Cor. 10.*

6. *Phlomis*; *Orientalis*; folis laciniatis. *T. Cor. 10.*

7. *Phlomis*; *Orientalis*; angusto & longiori folio; flore luteo. *T. Cor. 10. Boerb. Ind. alt. Plant. Vol. 1.*

The *Phlomis fruticosa* was called by the Antients *Verbascum*; for which Reason *Tournefort* makes it belong to that Kind. The medicinal Virtues are not known; only it is recommended with the *Lamium* and *Galeopsis*: The Juice, however, is emollient. *Hist. Plant. adscript. Boerhaav.*

PHLUS, φλῦς. This Word occurs, *Lib. de intern. Affect.* where we read, ἡ ἐν τῇ κεφαλῇ ὑπὸ τὰς τρίχας διὸν φλῦς ὕπαισι. And on the Head, under the Hairs, there is, as it were, a Cortex. In this Passage φλῦς signifies the same as φλόσ (phloos), or φλοῖς (phlois), that is, a Cortex, or scaly Skin, like the Exuvie or Slough of a Serpent: For which Reason *Calvus* renders the Word *squamulas*, "small Scales." *Hesychius*, also, expounds φλῦς by φλοῖς, λεπύχανον (*Lepychanon*), and λεπύρον (*Lepyron*), Words much of the same Import.

PHLYCTÆNÆ, φλυκταῖναι, from φλύζω, to boil. Small Eruptions on the Skin, arising from an hot or acrimonious Humour. *Hippocrates* sometimes represents them, as resembling those Pustules which appear after Ambustions.

PHLYCTÆNOIDES. An Epithet of Pustules which resemble *Phlyctænæ*. *Blancard.*

PHLYCTIDES, φλυκτίδες. The same as **PHLYCTÆNÆ**.

PHLYSIS. An Eruption on the Skin, from a Redundance of Humours. *Castellus* from *Galen*.

PHLYZACION, φλυζάκιον. A Pustule, or Vescication on the Skin, excited by Fire or Heat. Sometimes it imports the same as **PHLYCTÆNÆ**.

PHOCA, or *Vitulus Marinus*. The Sea Calf. An amphibious Animal, which lives sometimes in the Sea, and sometimes on Shore, but most in the Sea. It is said, that the Fins of this Animal, especially those taken from the Right Side, excite Sleep, when applied to the Head: Its Fat has an emollient Quality, and, if rubbed on the Region of the Uterus, is thought proper to provoke the Menses, and remove Vapours: Shoes made of the Skin of it are, also, thought to be a good Preservative against the Gout. *Lemery, Traité des Drogues.*

P H O

PHOCÆNA. A Species of Dolphin, somewhat thicker and shorter than the ordinary Kind; the Fat of which is esteemed resolute, and good for the Nerves. *Lemery des Drogues.*

PHODES, or **PHOIDES**, φώδες, or φοίδες. The same as **PHAUSINGES**.

PHOENICITES. A Name for the *Judaicus Lapis*.

PHOENICIUM EMPLASTRUM. The *Emplastrum Diachalcites*, or *Diapalma*.

PHOENICIUS MORBUS. The *Elephantiasis*. See **LEPRA**.

PHOENICOPTERUS, φοινικόπτερος. The Name of a Bird, frequently mentioned by the Antients, whose Tongue and Brains were esteem'd great Delicacies. I don't know, that it is certain what Bird this was; but, by the Derivation, it should have red Wings.

Lemery describes the *Phoenicopterus*, as a Bird as large as an Heron, of an Ash-colour, with a crooked Bill, and very long Neck, which lives upon small Fish, and Shell-fish: He says it is esteem'd aperitive, and good for the Epilepsy; and that the Fat is resolute, and good for the Nerves.

PHOENICURUS. The Name of a Bird called, also, *Rubecula*, *Ruticilla*, and *Erithacus*. *Lemery* says, it is about the Size of a Cuckow, and has a red Tail, as the Derivation of the Name imports. It is esteem'd good for the Epilepsy, either eaten, or in Broth. The Fat is resolute, and anodyne.

PHOENIGMUS, φοινίγμα, from φοίνιξ, a red Colour. A Rubification, or Rubefaction, of the Skin; that is, an Excitement of a Redness of the Skin, by means of acrid Applications.

PHOENIX. A Name for the *Gramen*; *Loliaceum*; folio & *Spica angustiore*. See **LOLIUM**.

PHOLAS. The Name of a Sea Shell-fish, somewhat like a Mussel, which grows to the Rocks at the Bottom of the Sea, and is said to be good Food. The Shell, powder'd, and taken internally, is said to be aperitive, and good for the Stone.

PHOLIS, φολίς. A Scale of Metal.

PHOLLIDODES, πολλιδώδης, *Lib. 4. Epid.* is apply'd to Tumors in the Legs, and signifies soft, lax, and fungous, as in those who labour under an *Anasarca*, and especially, a *Leucophlegmatia*. All the Copies, indeed, read πολλιδώδης, which *Calvus* renders *squamous*, because φολίς is the same as λείπις (*lepis*) a Scale like that of Fishes, or Serpents. Whence the Passage in *Hippocrates* above-mention'd, supposing this to be the true Reading, may be understood of such Tumors in the Legs, as, by reason of the Diuresis and Corrugation of the Skin, and the want of Aliment, are cover'd with a scaly sort of Substance, as with a Cortex, as is often observable in the Legs and Feet, and other Parts, under a Cachexy or Dropsy. But perhaps for πολλιδώδης we are to read πολλικώδης (*Phollicodes*) which signifies fungous, lax and empty like Husks, void of Seeds, as *Galen* expounds the Word in his *Exegesis*, with an Eye, it is probable, to the Place in *Lib. 4. Epid.* where it is said, τὰ πολλικώδη αὐτοῦ αἰνύμενα, "the pustulous Eruptions were soft and lax." *Erotian* expounds πολλικώδη by ἐφελώδη and λεπράδη, squamous and scabrous, as if exasperated by the *Lepra*; for the Antients, he says, called the Asperities of the Skin, proceeding from the *Isora*, and the like Affections, by the Name of φάλλικες, *Phallices*. And this affixes a very different Idea to the Word, which must then be understood of those Tumors, which are exasperated with a sort of squamous Crust, as is sometimes observable in cachectic Bodies.

PHORACIODES, φαρακώδης, from φεράς (*phoras*), which in the *Exegesis* is expounded by εὐσύλλεπτος (*eusylleptos*), disposed for Conception, *Lib. 2. γυναικ.* is spoken of the Orifice of the Uterus, as open and duly qualified in order for Conception. But *Foesius* suspects, that the Word ought to be read φαρακώδης (*pharaciododes*), which *Galen* and *Erotian* expound by ρυτιδώδης (*rutidodes*) corrugated. But he should rather like to read, he says, φεργανώδης (*phorganodes*), because φεργάνη (*Phorgane*) is expounded, in *Hesychius*, by ἀραιή (*Aræotes*), as importing the Orifice of the Uterus to be lax, rare, and open; which, *Lib. de Muliebr. Nat.* and *Lib. de Morb. Mul.* on the same Occasion, is expressed by ἐνυρ (*enry*), wide, expanded.

PHORIMOS, φόριμος. An Epithet for that Species of Alum, which is call'd in the Shops, *Roch-alum*.

PHORINE, φορίνη. The Skin of a Man or Beast, or, according to *Pollux*, an Hog's-skin. Thus, *Lib. de R. N. I. A.* speaking of Swines-flesh, it is said, that it ought to be eaten ἀνευ τῆς φορίνης, that is, as *Galen* says, in his Commentary, ἀνευ τοῦ δέρματος, "without the Skin." φορίνη is, also, spoken of the human Skin, which by some, too, is called πυρίνη (*Pyrim*), as *Hesychius* observes.

PHOS, φῶς. Light; but it, also, signifies the black Circle, which surrounds the Pupil of the Eye.

P H O

PHOSPHORUS, from φῶς, Light, and φέρω, to bring. The Name of a Collyrium, in *Galen, L. 4. de Comp. M. S. L. Cap. 7.* It is the same as the DIACROCV.

There are several Chymical Preparations call'd by this Name, which shine in the Dark, some of which I have taken Notice of under the Article ALUMEN.

HISTORY OF PHOSPHORUS.

The *Phosphorus igneus* differs from other naturally shining Bodies, in this, that it is in reality nothing but a kind of concealed Fire, which discovers itself by its Light and Smoke; but, if you rub it harder, it will break out into a Flame. This Discovery appeared about the Year 1677; but was preceded by *Baldwin's* Phosphorus, which is an artificial Imitation of the natural *Bolognian* Stone. *Christopher Adolphus Baldwin*, Governor of a certain Place in *Misnia*, happened to dissolve Chalk in Aqua Fortis, or Spirit of Nitre, which last he again brought over by the Fire; and he found the remaining Body to imbibe the Light, when exposed thereto, and retain it for some time, and carry it along with it into a dark Place, as a Sponge does the Water it has imbibed. This Experiment did not a little startle the *Cartesians*, (very few of whom had seen the *Bolognian* Stone) that Light should of a sudden become a gross and portable Thing, whose Rays they supposed to consist in Pressure only, and to be propagated in an Instant of Time. *Baldwin*, in an obscure manner, described his Experiment in a Treatise intituled *Aurum Auræ*.

To this succeeded *Brand of Hamburg's* Invention, named the Phosphorus igneus, the Pyropus, and afterwards, by way of Eminence, the Phosphorus, which was discovered in this manner. *Brand* had fallen on a Chymical Process, extant in a printed Book, which taught how to prepare from Urine a Liquor fit to ripen a Particle of Silver into Gold; and in labouring on this he found out his Phosphorus. He had some Acquaintance with *Jo. Daniel Kraft*, of the Council of Commerce to the Elector of *Saxony*; and, by his means, with *Jo. Kunkel*, one of the said Prince's Bed-chamber; but who, under that Character, performed Chymical Processes. On persuading *Brand*, that this Arcanum might be sold to the Great at an high Price, and offering him their Assistance, they obtained the Composition from him. And, upon going from *Dresden* to *Hamburg*, they both saw and learned from him the Process of the Phosphorus. But *Kunkel*, upon his Return Home, had committed some Mistake in the Process, and for a long time could not hit upon the Phosphorus; and he sent a Letter to *Brand*, complaining that the Secret was not sincerely communicated to him. But *Brand*, repenting that he had been so easy in imparting the Secret, delayed to satisfy him. *Kunkel*, in the mean time, after various Trials, corrected the Error himself: Whence he pretended to be the Inventor; and of this *Brand* bitterly complained.

Kraft, who was a Man of a good Address, undertook to vend the Discovery among the Great; and, in his Way to *England*, he made me a visit at *Hanover*; and ingenuously mentioned to me, both the Matter of the Process, and its Author *Brand*; and he likewise shewed the Experiment of the Phosphorus, to the great Surprise of *Duke John Frederic*; and afterwards in *England* to *K. Charles II.* *Prince Rupert*, the illustrious *Mr. Boyle*, and others, of which there is an Account by *Dr. Hook*. But he never, as far as I know, mentioned himself as the Inventor. The Phosphorus was first sent into *France* by me to *Huygens*; and at length the Composition itself was, by the illustrious *Tschirnhausen*, upon his Return from *Germany* into *France*, communicated from me to the Royal Academy, to whom *Huygens* had already shewn the thing. That *Boyle* had got but an imperfect Description of it, appears from his Dissertation on Phosphorus; for his Phosphorus differs from *Brand's* only in this, that it is more imperfect.

But *Duke John Frederic*, as he was a magnificent and generous Prince, ordered that I should send for the Inventor: *Brand*, therefore, came to *Hanover*, and faithfully communicated to us the Process; for, whatever he did, I imitated in another Laboratory. Upon collecting a large Quantity of Urine, *Brand* came to us, and went through the Process. Upon *Brand's* Return to *Hamburg*, the Duke settled an annual Pension upon him, which was punctually paid him till the Duke's Death; and this probably was the only considerable Encouragement which he reaped from his Phosphorus.

I myself shewed to the same Prince, who was very curious in these Matters, another kind of Phosphorus, which we may call the *Thermophosphorus*, which does not acquire its shining Quality from Light, as the *Bolognian* and *Baldwin's* Phosphorus, but from Heat. There is a kind of Substance found in Mines, capable of being dissolved by Fire, with the Powder of which if you draw Letters and Figures on an iron Plate, and lay the Plate upon burning Coals, the

P H O

Strokes shine, though the Plate be not ignited, and though the Rays of Light cannot penetrate from the Coals to the Figures.

It is a thing commonly known, that hard Bodies acquire Heat, and at last take Fire, by Motion; and the Flame produced by the Attrition of two Pieces of Wood was, by the antient *Saxons*, regarded as a religious Ceremony. But we are not so well acquainted with the Manner, in which Smiths at our Mines kindle the Fire extinguished in their Forges. They strike, with an Hammer, an iron Bar on its very Edge, and which is wont to come from the Mines, in the Form of a quadrangular Prism. This Bar they shift, that the Edge may be alternately struck, now on the Right, and again on the Left: Thus it immediately becomes hot, and, after repeated Blows, glowing hot, so as to set on Fire any inflammable Matter.

We have, besides, other kinds of Phosphori, in which there are no Traces of Fire, the principal of which we owe to *Joh. Bernoulli*, who has improved the Observations of others on Mercury shining in Vacuo, and carried it so far, that now it may be produced at Pleasure; whereas before Mercury was rarely, and by chance, made to shine. It is credible, that this Phosphorus always retains its shining Quality, or, at least, for a long time; because it does not stand in need of the free Air to make it shine, like the Phosphorus igneus, but emits a Light by only shaking it in a Glass, hermetically sealed; and with this the King of *Prussia* was so well pleased, that he rewarded the Inventor with a Gold Medallion. I understand, that *M. Dutal* at *Paris*, and others, have laboured with remarkable Success in establishing and promoting this Phosphorus. It would be worthy Inquiry, what Quantity of Light might be produced by many such Phosphori, continually shook; for a continued Shaking may easily be effected by means of a Machine, and the Light of many Phosphori may be collected either by Refraction or Reflexion, an Experiment which I wonder has not been hitherto attempted. *Leibnitz*, in the *Miscellanea Berolinensia*.

DR. SHAW'S ACCOUNT OF PHOSPHORUS.

We took half a Dram of Camphire, and ground it in a glass Mortar, with three Grains of the solid Phosphorus of Urine; then added as much essential Oil of Cloves, as served to reduce the Whole to a fluid Form. The Mixture thus made may be rubbed upon the Clothes, the Hair, or the Hands, without Danger of Burning.

The successful Method of making it is this: Evaporate any Quantity of fresh Urine over a gentle Fire, to a black, and almost dry Substance; then with two Pounds thereof thoroughly mix twice its Weight of fine Sand. Put the Mixture into a strong-coated Retort of Stone; and, having poured a Quart or two of clear Water into a large Receiver with a long Neck, join it to the Retort, and work in a naked Fire; let the Heat be small for the two first Hours; then increase it gradually to the utmost Violence, and continue thus for three or four Hours successively. At the Expiration of which Time, there will pass into the Receiver a little Phlegm, and volatile Salt, much black fetid Oil, and, lastly, the Matter of the Phosphorus in form of white Clouds; which either stick to the Sides of the Receiver, like a fine yellow Skin, or fall to the Bottom in form of a small Sand. Now let the Fire go out; but take not away the Receiver, before it is cold, for fear of setting the Phosphorus on Fire by admitting the Air. To reduce these small Grains into one Piece, put them into a little Tin Ingot-mould, along with Water; heat the Ingot to make the Grains melt together; then add cold Water, till the Matter is congealed into one solid Stick, like Bees-wax; which, being cut into little Pieces, fit to enter the Mouth of a Phial, may be preserved by Water, and keeping the Glass close stopp'd. If the Glass were not to be stopp'd, the Phosphorus would turn black on its Surface, and at length be spoiled.

The Cautions required to make the Process succeed are; 1. To evaporate the Urine, while it is recent. 2. To prevent its boiling over, and so losing the most unctuous Part. 3. To let the Matter afterwards ferment in the Cold. 4. To mix the black Matter with Sand, to prevent its melting and running together. 5. To use a Stone Retort, those of Earth being too porous, and suffering the Phosphorus to transude sooner than pass into the Receiver. 6. To have the Receiver very large, and with a very long Neck, to prevent its breaking and over-heating; which would either evaporate the white Vapour, wherein the Phosphorus consists, or else prevent its coagulating. 7. To put Water into the Receiver for keeping it cool, and quenching the Phosphorus, as it falls to the Bottom. 8. To make the Fire small at first, that the Retort may be preserved, and the black Matter gradually dried; which would otherwise swell and come over in a black Froth. Lastly, it

P H O

it is found necessary, that the Urine for the Operation be of such as use Malt Liquors, rather than Wine. All these Circumstances being required for obtaining the Phosphorus to Advantage, no wonder if so many of those who attempted it miscarried.

This Operation may be greatly shortened, by freezing and concentrating fresh Urine; afterwards evaporating it with Care; then digesting it *per se*, in the manner above-mentioned. When thoroughly digested, commit the Matter, in a large Quantity, to an iron Pot, with an earthen Head, as the Chymists usually do, for making Spirits of Hartshorn, or the Spirit and Salt of Urine. When thus all the Salt and Oil are obtained, let the *Caput Mortuum* be taken out, and mixed with twice its own Weight of Alum. The Matter may now be put into a well-coated long Neck, and worked with Care in a reverberatory Furnace, into very large Receivers filled with Water, and connected to the Necks by Adapters; the lower Ends whereof may enter the Water, as in distilling of Quicksilver; the Operation being continued for eight or ten Hours. And this we apprehend to be the best way hitherto known of procuring Phosphorus to Advantage. Dr. Wall informs us, that Mr. Boyle, being concern'd to find how small a Proportion of Phosphorus was afforded by Urine, desired him to look out for another Subject, that might afford it in greater Plenty. The Doctor afterwards causing a Piece of dry Matter to be dug up in the Fields, where Night-men emptied their Carts, he observed a great Number of small Particles of Phosphorus therein. This Matter the Doctor immediately carried to Mr. Boyle; who set Bilgar the Chymist to work upon it: But he could obtain very little Phosphorus from it, till another Material was added to it in Distillation; and then he procured Phosphorus in such Plenty, that, selling large Quantities at six Pence the Ounce, he soon became rich, and left England. The Matter which thus fixes and increases the Phosphorus, we apprehend to be Alum; which is itself not only prepared from Urine, but appears to afford the same kind of Acid that Phosphorus yields by burning. For, upon its Analysis, Phosphorus appears to be a Composition of a strong acid and an inflammable Matter, exactly in the manner of common Brimstone; whence it may not improperly be called an animal Sulphur. Accordingly, like common Brimstone, it will burn under a Glass-bell, and afford Flowers, that become an acid Liquor, like *Oleum Sulphuris per Campanam*, by attracting the Moisture of the Air.

And in this manner it has been used, so as to produce extraordinary Changes upon Metals, especially in the philosophical View; the Acid itself, even without Heat, proving a Menstruum to perhaps all the Metals. But when this Acid is driven into the Pores of the Metal, by the Action of the Flame in burning the Phosphorus, it seems productive of much greater Effects; as is known to those acquainted with the sublimer Metallurgy. This Phosphorus, of all the kinds hitherto discovered, seems the most useful.

This Phosphorus has been several Ways disguised, so as to make it appear under various Forms; sometimes as a Solid, sometimes as a Liquid, sometimes as an Ointment, and sometimes as a running Mercury. There are, also, others of different Kinds; of which we shall only mention two, discovered by M. Homberg: The first is that usually called the *black Phosphorus*, now commonly prepared with Alum and Wheat-flour, by taking four or five Parts of Alum, to one of Wheat-flour, and calcining them together to a brown or blackish Mass; which being powder'd, and put into a Phial, loosely stopped with Paper, and set in a Sand-heat, so as to continue glowing hot for some time; then removing the Whole from the Fire, and suffering it to cool gradually, and at last stopping the Bottle close. A little of this Powder, being poured out of the Bottle, and exposed to the open Air, immediately takes Fire, and appears like a glowing Coal. But the Powder must be fresh made, to have a strong Effect; for the Sun's Rays, or the Moisture of the Air, being gradually admitted to it, destroy its Virtue; whence it ought to be kept in a dark and dry Place. 'Tis remarkable of this Phosphorus, that it may be made almost from any animal or vegetable Substance, instead of Wheat-flour; but that no Salt whatever can be substituted instead of Alum.

M. Homberg's other Phosphorus is made of one Part Sal Ammoniac, and two Parts Lime slaked in the Air: These being mixed well together, a Crucible is to be filled with them, and set in a small Fire of Fusion; where, as soon as the Crucible becomes red-hot, the Mixture will melt, and should be stirred with an Iron Rod, to prevent its running over. When the Matter is entirely fused, it may be poured into a Brass Mortar; and, when cold, it will appear of a grey Colour, and almost as if it were vitrified. If now it be struck upon with any hard Body, it appears as on Fire, in the whole Extent of the Stroke: But, the Matter being brittle, it may be proper, for the Expe-

P H O

periment's Sake, to dip little Bars of Iron, or Copper, into the melted Matter in the Crucible; for thus they will be enamel'd, as it were, with the Matter, and these Bars may be struck upon, so as commodiously to repeat the Experiment several times before the Matter falls off. The Bars are to be kept in a dry Place, to prevent the Phosphorus upon them from running, by the Moisture of the Air.

Both these Phosphori were discover'd by Accident. The first was obtained by searching for a limpid Oil, from the common stercoraceous Matter, that should fix Quicksilver; and the second by endeavouring to calcine Sal Ammoniac with Lime, so as to render it fusible like Wax; which End was obtained, but not the other.

There have been no very considerable Uses of these two Phosphori hitherto discovered; but the Phosphorus of Urine has been employed for making many curious Experiments; a few whereof we shall here exhibit.

1. The Light of this Phosphorus appears greater in Vacuo, than in the open Air.

2. In hot Weather it is observed to dart Flashes of Light through the Water wherein it is contained, so as exactly to resemble Lightning; which thus darts unextinguished through watery Clouds and Vapours.

3. These Flashes are not liable to kindle or burn any combustible Matter, in which they resemble the harmless Kind of Lightning; but, in a condensed State, this Phosphorus burns very furiously, and with a most penetrating Fire, so as to melt and dissolve Metals: In which respect it again resembles the more destructive Kinds of Lightning, which are found to have the same Effects.

4. If a little Piece of this Phosphorus be view'd through a Microscope, the internal Parts appear in a constant Ebullition.

5. A little Piece of it being put into a Silver Spoon, and held over the Fire, it bursts out into a shining Flame, leaving a red Spot in the Spoon, of a corrosive acid Taste; and, being diluted with Water, the Mixture makes a Conflict with Oil of Tartar *per Deliquium*.

6. If a little of it be ground in a Glass Mortar, with twenty times its own Weight of Nitre, it does not take Flame, but only disperse a shining Property through the Body of the Nitre; but, if ground in the same manner, with Iron Filings reduced to Powder, a bright Flame immediately ensues.

7. Though this Phosphorus appears to be a kind of Sulphur, yet it does not dissolve in highly rectified Spirit of Wine, but communicates some sulphureous Parts thereto: For if this Spirit be poured to Water in the Dark, it yields a faint Degree of Light.

8. The Nature of this Phosphorus is considerably changed, by being long digested with Alcohol; for thus it becomes a kind of white transparent Oil, that does not coagulate without an extreme Degree of Cold, nor afford any manner of Light; and, when fresh Spirit of Wine is pour'd thereon, it does not, like other Oils, mix therewith, nor dissolve therein.

9. If this Phosphorus be separated from the Spirit of Wine, wherewith it was digested, and be afterwards well washed in common Water, it, by degrees, recovers its former Consistence, and coagulates into a transparent Matter whiter than before; but neither affords so much Light, nor recovers its primitive shining Virtue, nor its yellow Colour.

10. The Spirit of Wine so separated becomes yellowish, and smells strong of the Phosphorus; though it shines not, except when poured upon Water.

11. This Phosphorus, being mixed with a large Quantity of Pomatum, makes, as well as with Camphire, and the Oil of Cloves, a shining Unguent, that may be rubbed on the Hands and Face, without Danger of burning, so as to render them luminous in the Dark.

12. If a Piece of Paper, or Linen, be dipt at one End in Spirit of Wine, and a Bit of Phosphorus be crushed on the other End that remains dry, the Spirit will be fired by the Phosphorus, without immediate Contact. But the same thing will not happen, if the Paper were dipt in Oil of Turpentine, nor if a Bit of Phosphorus were rubbed upon the End dipt in the Spirit of Wine; only, when the Spirit is entirely evaporated, the Phosphorus will burn, though with Difficulty, and slowly.

There are many of these odd kind of Experiments, that might be made with Phosphorus; which is a Substance that seems in Chymistry to be much such a thing, as the Load-stone in Natural Philosophy; and its Effects almost as odd, and difficult to be explain'd, for want of knowing the latent Properties of Bodies.

A X I O M S.

We learn from the preceding Experiments, that the Phosphorus of Urine is applicable to many extraordinary Purposes, particularly

particularly to the introducing of uncommon Changes in metalline Bodies.

That, as most Discoveries of chymical Explosions and Phosphori were accidental, greater Things may be expected from a sagacious Experience, and by a further Discovery of Causes and Axioms.

That the Phosphorus of Urine may be made in large Quantities, and with small Expence; so as to afford desirable Opportunities for the farther Improvement of Chymistry and Metallurgy.

PHOTEL, by some called *Ficus Pharaonis Thevet*, is a Tree nearly resembling the *Banana-tree*, growing in the Kingdom of *Catay*, according to *C. Bauhine*; which is all we know of it.

PHOXINOS SQUAMOSUS. The Name of a River-fish, about half a Foot long, pretty thick, and covered with yellow and blue Scales, with a red Tail. It is esteem'd appetitive. *Lemery des Drogues*.

PHOXOS, *φοξός*. One with an acuminate or fastigiated Head, that is, sharpen'd towards the Top, the Eminences either of the Forehead or Occiput, or both, being depressed, or one or both of those Parts beyond measure prominent. Or, as *Galen* expresses it *Com. 1. in 6 Epid. ἡ φοξὴ κεφαλῆ*, &c. "An acuminate Head, with one or both the Eminences [of the Forehead and Occiput] indecently prominent, or having one Eminence, and wanting the other." And again, "Acute Heads want either the Eminence of the Forehead, or Occiput; or else have it produced beyond a just Degree." But *Phoxoi* are properly those who have the Top of their Head very much fastigiated and turbinated, and consequently deformed. *Thersites* is described by *Homer* with such a Head. *φοξός*, in *Hesychius* and *Erotian*, is expounded by *ἰξυκέφαλος*, "sharp-headed." The Word occurs twice *6 Epid.*

PHRAGMITES, *φραγμίτης*. A Name in *Dioscorides*, for the common *Arundo*.

PHRAGMOS, *φραγμός*, from *φράσσω*, to inclose as with an Hedge. An Anatomical Term for the double Series, or Cage, of Teeth.

PHRASIMUM *viride*. Flos *Æris*. *Rulandus*.

PHRENES, *φρένες*, was the Name by which *Hippocrates*, and the antient Physicians, called the *Diaphragma*.

PHRENESIS, PHRENETIASIS. The same as PHRENITIS; which see.

PHRENITICI NERVI. The Nerves belonging to the Diaphragm. See PHRENES.

PHRENITIS, *φρενίτις*, from *φρήν*, the Mind. A Phrensy.

There is no Inflammation, or particular Fever, of so great Importance in Medicine, as that which is lodged in the Brain, the noblest of all the Parts; and not only totally destroys the Use of Reason; but, also, induces a sudden Danger of Death, and is, by the *Greeks*, call'd *Phrenitis*. Now this Disorder is an acute inflammatory Fever, arising from too great a Congestion of Blood, and its interrupted Circulation, especially thro' the most minute Arteries of the Membranes of the Brain; and accompanied with intense Heat, a Delirium, and Danger of Death.

The Signs of an approaching Phrenitis are, by *Alexander Trallian*, in *Lib. 1. Cap. 13*, accurately and compendiously described in the following manner: "An approaching Phrenitis," says he, is preceded by intense and continual Watchings; or, if the Patients sleep, their Rest is troubled and interrupted. They, also, start, and are afflicted with terrible Dreams. They soon forget what is said to them; and if, at any time, they return an Answer to a Question, they appear more fierce and angry, than just before they seem'd to be. Their Pulse is hard and small, whilst they are frequently afflicted with a Pain of the Occiput. When the Disorder increases, their Eyes become more fix'd and red; Tears, at the same time, flowing from both of them." But the Signs and Symptoms of a present Phrenitis are by none of the Antients so well specified and characterized, as by *Cælius Aurelianus*, in *Lib. 1. Cap. 2*, in the following manner: "In a Phrenitis, the Patient is afflicted with an acute Fever; his Pulse is hardly perceptible on the Surface of the Body; or, if it is, it is low and tense; his Face is inflated and full; the Blood drops from his Nostrils; he is afflicted with continual Watchings; or, if he sleeps, his Rest is disturb'd; he is seized with a kind of turbulent Madness, a preternatural Solitude of Mind, and a Privation of Reason; he frequently changes his Posture in Bed, and his Head is in a continual Commotion. He is sometimes cheerful, without any apparent Cause; his Eyes are red; he weeps gently, and tosses his Arms about him, but has no Pain in his Head. His Joints are cold, but without any Tremor. His Urine is copious, yellow, aqueous, thin, and discharged by little and little. Some phrenitic Patients are afflicted with a Noise in their Heads, a Ringing of their Ears, and an incessant Head-ach. Their Looks are, also, fix'd and stern, and their Eyes frequently wink."

All these injured Functions of the Body, accompanying a Phrenitis, arise from too copious and impetuous a Conveyance of Blood to the Head; its interrupted Circulation thro' the minute Vessels of the Brain; its Stagnation; and its quick Conveyance thro' other unusual Ways. Hence Distentions of the Vessels of the Brain and Face happen; a serous Humour is secreted, and every-where obstructs the Vessels. The Brain is totally disturb'd, and especially in those Functions which are subservient to the Use of Reason; for *Hippocrates*, in his Book *de Flatibus*, and in many other Parts, justly observes, that Prudence and Reason depend upon a laudable State of the Blood in the Brain; or, in the modern Style, upon its equable Circulation thro' it; so that, when this is disturb'd, Prudence and Reason are destroy'd. And that the true Seat of a Phrenitis is in the Brain, is sufficiently evinced by dissecting those who have died of that Disorder; in whom, not only the Vessels of the Dura Mater, with its Sinuses, but, also, those of the Pia Mater, are infarcted with a thick and coagulated Blood; whilst these Membranes themselves are so dry and parch'd, that the Pia Mater can be easily separated from the cortical Substance of the Brain. Besides, the medullary Substance of the Brain appears cover'd with a large Quantity of a serous Humour. These Circumstances are confirm'd, in many Instances, by *Blancard*, in *Anatom. Pract. Obs. 3*. *Schenckius*, *Lib. 1. and M. N. C. Decad. 2. An. 5. Obs. 62*.

Among the antecedent Causes of a Phrenitis, *Cælius Aurelianus*, in the Part before quoted, justly reckons, drinking Wine too copiously; Watchings; remaining long exposed to the Sun; a Mind naturally giddy and inconstant; Anger; a Weakness of the Head, brought on by Study; and Youth. Now 'tis certain, that all those Things dispose to a Phrenitis, which render the Head weak and infirm; in consequence of which, there may easily happen a Stagnation of the Blood, and a too long Continuance of the Humours in its Vessels. Those Things, also, dispose to a Phrenitis, which forcibly convey the Blood from the inferior Parts to the Head. Hence 'tis confirm'd by practical Observations, that a Phrenitis, and delirious Fevers, are highly incident to those afflicted with long Grief, or Care, who fatigue their Minds by profound Meditation and Study; to those who are strong and vigorous; who are of melancholic and choleric Constitutions; who are often under the Influences of Anger or Hatred; who are rack'd by violent Passions; who are afflicted with Watchings and Inquietudes; who surfeit themselves with strongly hopt Malt-liquors; who are addicted to Wine and Women; to those who lead a sedentary Life, free from Motion and Exercise; and to such as, in consequence of a bad and preposterous Regimen, contain a large Quantity of impure Blood in their Veins. 'Tis, also, certain from Experience, that a Cessation, or speedy Suppression, of an usual hæmorrhoidal Discharge, of the Menstrues, or Lochia, in Child-bed Women, especially when such Patients are costive, lay a Foundation for a Phrenitis. For, in such a State, in consequence of the Stagnation of Blood in the abdominal Viscera, spasmodic Strictures are excited in the nervous Parts, which render the Circulation of the Blood unequal, and convey it impetuously to other Parts, where it is too copiously congested. A Phrenitis is, also, frequently induced by external Violence. This easily happens in Wounds and Contusions of the Head, especially in plethoric and cacochymic Habits; unless such a Misfortune is speedily prevented by Venesection and Diffusions. In a Phrenitis, arising from such a Cause, the Event is generally fatal, according to *Hippocrates*, in *Scd. 7. Aph. 14*.

A Phrenitis is justly to be distinguish'd into that of the Idiopathic, and that of the symptomatic Kind. In both of these, there is, indeed, an acute Fever, but with this Difference, that, in the latter, it precedes; whereas, in the former, it is the inseparable Concomitant of the Disorder. An idiopathic Phrenitis is rarely found in temperate Climates, but occurs more frequently in hot, dry, and southerly Countries; for which Reason the antient Greek Physicians, especially *Asclepiades*, and *Alexander Trallian*, have, in their Works, treated accurately and copiously concerning a Phrenitis. There are, however, in temperate Climates, Instances of a Phrenitis arising, without any previous Disorder; especially from Surfeits, continual Anger, and a Weakness of the Brain, produced by profound and continual Meditation, Watchings, and Fatigue; in sanguineous, or choleric and melancholic Persons; those addicted to a sedentary Life; hypochondriacal Persons; and those subject to the Hæmorrhoids, especially if that Evacuation is imprudently stop'd. But *Willis*, in *Pathol. Cerebri, Cap. 10*, justly informs us, from his own Experience, that unless this Species of Phrenitis is soon removed by proper Medicines, it degenerates into a Mania, or a furious Delirium. An idiopathic Phrenitis, which degenerates into a Mania, also, frequently happens after burning, purple, exanthematous, and catarrhus Fevers, improperly treated by a too hot Regimen; by volatile Medicines, which throw the Blood into too violent Commotions; by Opiales; by too forcible Repellents; by Refrigerants; and unseasonable Venesections. And this Disorder happens the more infallibly and violently, when the Patient is much and frequently subject to Anger.

A symptomatic Phrenitis is much more frequent in our Country; for it frequently happens, and proves mortal, in the Height

of malignant Fevers, acute exanthematous Fevers, petechial Fevers, the Small-pox, malignant catarrhus Fevers, especially such as rage in Camps, and most of all in the *Hungarian Fever*, particularly when the Disorders are ill treated; for in these Diseases a Phrenitis, of the symptomatic Kind, generally appears about the critical Days, and is attended with Rigor and Tremor of the Joints, a Tension of the Præcordia, a Refrigeration of the Extremities, and a Thinness of the Urine, which is discharged either in too small, or in too large a Quantity. But because, in consequence of the preceding Disease, and the continual Watchings, the Strength is almost totally lost, and the Tone of the Vessels distributed through the Membranes of the Brain too much weaken'd, irresolvable Stagnations of Blood happen in them, which generally prove mortal on the third Day.

But, though a Phrenitis frequently degenerates into a Mania, according to the Antients, especially *Hippocrates*, *Cælius Aurelianus*, and *Aretæus*, who for this Reason join, or rather confound, the one with the other, there is yet a great Difference between them; for in a Phrenitis there is always a Fever, accompanied with a quick, hard, and small Pulse. There is, also, a Delirium, not absolutely intermitting, but sometimes remitting, at which time every thing which happened under the Delirium, is forgotten. But a Mania is a chronical Disorder without an acute Fever, though accompanied with a preternaturally hard and unequal Pulse, which is sometimes small, and at others large and quick. A Mania has, also, its lucid Intervals, and is generally accompanied with great Pride, Anger, and Hatred to the Patient's Friends and Neighbours. And, when the Paroxysm ceases, the Maniacs have generally a surprising Remembrance of what happened under it. A Phrenitis is, also, different from that slight Alienation of Mind, which is frequently observed in acute Fevers, before the critical Expulsion of the exanthematous Matter; for such a slight Alienation of Mind goes more easily off, nor is it accompanied with thin and watery Urine, nor a Rigor and Refrigeration of the external Parts: Sometimes, also, after the Decline of an acute Fever, we observe, for some Days or Weeks, a certain Foolishness, or Inconstancy of Mind, which is different from a Phrenitis, arises from the Loss of the Strength, and Weakness of the Brain produced by the Disease; and, as the Strength returns, it either spontaneously ceases, or is easily removed by proper Medicines.

The C U R E.

Since the violent and terrible Symptoms, which accompany a Phrenitis, depend upon an Inflammation of the Meninges, which is their immediate Cause, the principal Intention of the Physician ought to be, either to prevent, or remove, such a Misfortune. But as the Cause of this Inflammation is a Stagnation of the Blood in the Vessels of the Meninges, and a sudden Conveyance of it to other Parts accompanied with Pain, a spasmodic Tension, and Heat, Reason informs us, that those Medicines are, of all others, the most proper, which check the fierce Impetus of the Blood to the Head, derive the congested Humours from it, disengage and discuss the stagnant Blood, and relax the spasmodically constricted Meninges.

Now, both in preventing and curing a Phrenitis, both antient and modern Physicians unanimously recommend Venesection, as near as possible to the Part affected. *Trallian*, and the *Arabians*, in a Phrenitis, often open'd the Jugular Vein; but this laudable Practice is too much neglected, since 'tis certain from Experience, that in all Disorders of the Head, arising from a Congestion and Stagnation of the Blood, opening this Vein is preferable to an Incision of any other, because both the external and internal Jugular Veins derive the Blood from the Carotid and Vertebral Arteries. Nor is the Incision of this Vein either so difficult, or dangerous, as 'tis commonly thought, since by applying a Ligature about the Neck, in such a manner, as to render the Vein turgid, it may be easily performed. Besides, opening the Sublingual Veins is a Practice highly esteemed by Physicians, not only in a Phrenitis, but, also, in other Disorders of the Head. Thus, *Ammannus*, in *Paræn.* informs us, that in the Year 1664. among all the Soldiers who return'd from the *Hungarian Expedition*, and labour'd under the *Hungarian Fever* in the Hospitals, none of those died, who, in due Time, had the *Venæ Raninæ* open'd, whilst those were carried off by the Disorder, who had not that Advantage. I have, also, known the Opening of these Veins highly useful in acute Fevers, for preventing a Delirium, when performed on the sixth or seventh Day, whilst the Patient's Reason yet remained. But, if a Delirium is already present, it is with Difficulty performed. Besides, if the Incision is large, a terrible and fatal Hæmorrhage is to be dreaded, in consequence of the Impetus of the Blood to the Head. On the contrary, from too small an Orifice, but little Blood is evacuated; and, a

Space being there procured, the Blood is rather more solicited to the Brain. Others, after the proper Application of a Ligature to the Neck, recommend opening the Frontal Vein; and *Trallian* informs us, that by this means he cured a Person afflicted with a violent Phrenitis. Some prefer Arteriotomy in the Temples. Thus *Panarolus*, in *Pentec.* 1. *Obs.* 19. informs us, that in a violent Phrenitis he found this Practice so successful, that the Patients were immediately relieved by it. In a Phrenitis, *Cælius Aurelianus*, after shaving the Head, orders the Whole of it to be scarified. But the *Egyptian Method* of scarifying the Nostrils is far more commendable; and, if a proper Instrument for this Purpose cannot be had, the End may be obtained by thrusting a Straw, or any other thing of the like Nature, up the Nostrils, in such a manner, as to procure an Hæmorrhage, which I have often seen productive of immediate Relief. These Methods of Venesection in the Parts contiguous to that affected are to be used not only in the idiopathic, but, also, in the symptomatic Phrenitis. But, when, from a Retention or Suppression of the Menstrues, or Lochia, a Phrenitis is dreaded, a Vein is quickly to be open'd in the Foot, and a large Quantity of Blood must be taken away. If from any Fault, or Interception, of the Hæmorrhoids, a Delirium is dreaded, the best and most proper Method of affording Relief is, to open the hæmorrhoidal Veins by the Application of Leeches.

After a due Evacuation of Blood, the Body is to be render'd soluble; since, when the Patient is costive, the Afflux of the Humours is directed to the superior Parts, whereas, when his Body is sufficiently soluble, they are derived to the inferior Parts. *Hippocrates*, in *Lib. 3. de Morbis, Sect.* 9. justly advises, that, in the Cure of a Phrenitis, the Body is to be rendered soluble by moistening Potions, which relax the spasmodically constricted Coats of the Intestines, because Spasms of the Primæ Viæ are frequently the Causes of Deliriums. But, for answering this Intention, I, above all other Medicines, recommend Potions prepared with Manna. Thus,

Take four Ounces of Manna; dissolve it in a Pint of Whey; and add one Dram of Cream of Tartar, half a Dram of Nitre, and one Ounce of the Oil of sweet Almonds.

Baglivi, in *Prax. Lib.* 1. recommends the Pulvis Cornachini in the following manner: "Since, says he, it has often been observed, that Deliriums are terminated by Fluxes, I have therefore, in Imitation of the Method pointed out by Nature, found the Pulvis Cornachini effectual for this Purpose; drinking after it diluting Decoctions prepared of Barley, Sal Prunellæ, and other Ingredients calculated for sweetening the Humours, especially if there is a preternatural Heat of the Viscera, and an internal Inflammation." But, if the Case calls for speedy Relief, the Body is to be rendered soluble by a lenient, pægoric, and domestic Clyster.

Among the internal Medicines against a Phrenitis, we must, also, class diluent, demulcent, and moistening Potions drank in large Quantities, if the Patient is very thirsty, which, according to *Aretæus*, rarely happens. But, among all other Drinks, none is more proper and expedient than Whey, either acidulated with Citron-juice, and prepared with Julap of Roses, or edulcorated with Syrup of white Poppies. In a Quart of this Whey, we may, with Advantage, dissolve a Dram of depurated Nitre, or Sal Prunellæ. Phrenetic Patients, also, with Advantage, use Emulsions prepared of Decoctions of Barley, Shavings of Hartshorn, and the Four cold Seeds, with Julap of Roses; especially if to a Quart of such an Emulsion two Scruples of Nitre are added. Ptisans, and Milk mixed with the *Selteran* or *Antonian Waters*, are very proper for those who labour under this Disorder; for the more copiously these Liquors are drank, the more efficacious they are in diluting the Humours, relaxing the constricted Vessels, removing Obstructions, and extinguishing the Heat. The diaphoretic and discutient Mixture, described under the Article ANGINA, is, also, of singular Service, not only in a Phrenitis, but, also, in all other Inflammations.

Among the external Means of freeing the Head from the Afflux of Humours, we may justly reckon bathing the Feet, or wrapping them up in a moist and warm Linen Cloth, or, which is still better, temperate Baths of fresh Water. The remarkable Use of these is not only confirmed by daily Experience, but, also, supported by the best Authorities. Thus *Alexander Trallian*, in *Lib.* 1. tells us, "That those who have sufficient Evacuations made, whilst the Quantity of the Humours is prejudicial to no Part of the Body, but are afflicted with a Driness of the Body, and an obstinate Watching, ought to bathe and anoint; and, even if the Patient is feverish, it will do him no Harm to bathe in this manner, especially if the Bath is tepid, and neither the Air, nor the Bathing-tub, too hot. But those who do not bathe for fear

“ of the Fever, are greatly mistaken, since, by abstaining from the Bath, the Patients have their Watching, and Perturbation of Mind, increased. Such Patients are, therefore, to be bathed in the manner directed, since by this means they are restored to a due Temperament, and freed from their Delirium, and the Disorder which excited the Fever.” The Antients, also, and especially *Alexander Trallian*, and *Arctæus*, after Venesection and Purgation, fomented the Head with an *Oxyrrhodinum* of Vinegar of Roses, lest, as they said, the Head should attract a large Quantity of Humours, and be filled with them. Nor is this Piece of Practice to be condemn’d. In all Deliriums, however, I with great Success order the Head to be shaved, and fomented with the following temperate Epithem :

Take of Rose-vinegar, two Ounces ; of the Spirit of Roses, in which ten Grains of Camphire are dissolv’d, two Drams ; of pure Nitre, two Scruples ; and of the Oil of Rosewood, twenty Drops. Mix all together for Use.

This Method of curing not only an idiopathic, but, also, a symptomatic Phrenitis, and especially that inveterate Species of the Disorder, which seems to degenerate into a Mania, is founded upon my own Experience ; nor can any other Measures be well invented, or found out : But the Use of these must be for a considerable time persisted in. *Alexander Trallian*, in *Lib. 1.* gives an accurate Account of the Regimen proper for phrenitic Patients, in the following manner : “ The Place, says he, in which the Patient lives, is to be duly consider’d, since he ought to be expos’d to an Air, which is neither too thick, too moist, nor too cold, lest the Pores of his Head should be by that means obstructed, or a Repletion of it produced. But let the Atmosphere be temperate, that by its laudable Quality the animal Spirits may be revived and relaxed. Let his Chamber be rather light than dark, that by this means he may gradually arrive at the Perception and Remembrance of such Objects as he was formerly accustomed to. For this Reason, let some intimate Acquaintances attend him, and reprove him for what he does, and exert a due Authority over him. Nor ought any Servant or Friend, on whose account he is sometimes grieved, or at whom he is angry, to enter the Room ; for this generally irritates the phrenitic Patient, and lays a Foundation for his greater and more manifest Perturbation. Nor ought great Numbers of his Friends and Acquaintances to enter his Chamber, since they not only form a Crowd about him, but, also, render the Air thick by their Breaths. He is not to be removed in Bed with Violence, but gently, lest, in consequence of his Weakness, he should be hurt ; for this, above all things, irritates the Patient, and prevents Sleep. Let the By-standers hold all his Limbs without Violence, and gently rub them, especially the inferior Members : And his Limbs are to be secured with Cords, principally when his Convulsions seize him ; for this solicits the Matter to the inferior Parts, and allays the Convulsions. It is, also, expedient, when the inferior Parts are rub’d, to foment them, and apply Ligatures to them in such a manner, that the Matter by Fomentation and Friction convey’d to them, may be derived still farther downwards.”

With respect to Venesection, we are to observe, that phrenitic Patients often absolutely refuse to submit to it : In which Case, I know no more expeditious and effectual Method of Relief, than suddenly and unexpectedly to thrust a Quill or Straw into the Nostrils ; by which means a large Quantity of Blood is sometimes commodiously evacuated. But, if the Phrenitis is idiopathic and chronic, we are not to open the Frontal Vein, especially in plethoric Habits, till we have previously opened a Vein either in the Arm or Foot, lest the Impetus of the Blood to the Head should be augmented. Neither, in performing this Operation, are we to use too sharp an Instrument, lest, passing it through the Vein, we should wound the Pericranium.

A Phrenitis arising from any Disorder of the Menes and Hemorrhoids, and the violent Spasms by that means produced, is best and most commodiously alleviated by Baths, drinking Mineral Waters, and the Application of Leeches to the Veins of the Arms, using, at the same time, a proper Regimen and Diet ; for I have known a long-continued Phrenitis happily removed by the Eruption of the menstrual or hemorrhoidal Discharge. But when a Phrenitis does not so much proceed from a Redundance of Blood congested in the Vessels of the Brain, as from a subtle, acrid, and virulent Matter, which is either repel’d from the Surface of the Body, as in exanthematous Disorders, or, being, by too hot and volatile Medicines, too much exalted, is firmly impacted in the Dura Mater, which is a nervous Membrane, excites Spasms, hinders the free Circulation of the Blood, and intercepts its Return to the Heart, besides opening the Veins contiguous to the Head, we are to shave the

Head, and apply to it the warm Parts of Animals just killed, such as the Lungs, the Liver, and the Omentum, which, becoming cold, are to be immersed in warm Water, in order to heat them again.

In *Poland*, a melancholic and maniacal Phrenitis is very frequent, in consequence of a latent *Plica* ; and, when the latter appears, the former ceases. For this Reason, ’tis expedient to solicit and forward the Egress of the *Plica* ; for which Purpose, the Inhabitants of that Country generally use a Decoction of two Handfuls of Club-moss, prepared with two Quarts of Water. When with this Decoction they wash their Head and Hairs twice a Day, the *Plica* generally appears in a Week’s time, and removes the Delirium. When in a *Plica Polonica* the Hairs are cut off, there frequently ensues a violent Head-ach, which is succeeded by a Phrenitis, a Fever, and sometimes a Mania ; which, however, are soon removed by using the Decoction of Club-moss, or the Liniment of Club-moss, described in *M. N. C. Dec. 1. An. 2. Obs. 54.* by which means the *Plica* is recalled.

But as in all Inflammations, so, also, in a Phrenitis, we are carefully to abstain from acrid Substances, and such as put the Humours into a Commotion ; from spirituous Liquors ; from violent Exercise, both of Body and Mind ; and from all Aliments capable of putting the Blood into a preternatural Motion. The Patients are by no means to be irritated and provoked to Anger : For which Reason, no Person who has injured them, or whom they cannot endure, is to be admitted to them. Opiates and Narcotics are by no means to be used in a Phrenitis, especially where the Strength is already impaired ; for ’tis certain from Experience, that, in Fevers, Deliriums are sometimes brought on by Opiates and Narcotics. Hence, *Alexander Trallian*, in *Lib. 1.* justly advises, “ That in a Phrenitis, where the Strength is low, we are to exhibit nothing which induces Sleep, and a Torpor ; since, by such Medicines, a great Injury is done to the Patient.” Vesicatories, also, by some much used in a Phrenitis, are to be condemned ; for the Cantharides, by their acrid Stimulus, irritate the already tense and spasmodically constricted Fibres ; by which means they increase the Delirium, and bring on Convulsions, as *Baglivi*, in *Lib. 1. Prax.* informs us, in the following manner : “ In *Rome*, says he, I observe more Men killed than cured by Vesicatories, which, however, are more beneficial, and less dangerous, to Women : ” And, a little after, he subjoins, “ If Vesicatories are applied to Patients labouring under a Delirium, accompanied with an acute Fever, a Driness of the Tongue, and the Signs of a violent Inflammation of the Viscera, all the Symptoms become worse, and the Patient, for the most part, dies of Convulsions.” *Frederic Hoffman*.

When a violent and perpetual Delirium arises from a primary Disorder of the Brain, accompanied with a continual Fever, it is called *A true Phrenitis*.

When a Phrenitis arises from a Disorder communicated to the Brain from some other Parts, in Fevers and Inflammations, it is called *A symptomatic Phrenitis*, a Disorder which corresponds to the *Greek πνευματική*, and the *Latin Desipientia*.

A true Phrenitis is preceded by Heat ; a violent internal and inflammatory Pain of the Head ; a Redundance of Blood ; an inflammatory Disposition ; a Redness of the Eyes and Face ; turbulent Sleeps ; a slight Degree of Folly ; Youth ; the Use of hot Substances ; remaining in the Sun ; Haughtiness, or Fierceness ; sudden Forgetfulness ; a Driness of all the Parts ; and especially of the Brain ; and picking the Knaps of the Bed-cloaths.

A symptomatic Phrenitis is preceded by almost every acute Disease, accompanied with a Fever ; as a Pain of the Side, which is not pleuritic, but accompanied with a slight Perturbation of Mind, and Inflammation of the Pleura, Lungs, and Diaphragm, which is a very bad Sign : Such an Inflammation is prognosticated by a Blackness of the Tongue, a Suppression or Whiteness of the Fæces, and a Retention of the Urine, which Symptoms never fail to prove mortal : A thin, pale, and ill-colour’d Urine ; a Want of Thirst ; Redness ; Urine with black Matter suspended in it ; and Watchings ; are Signs of an approaching Inflammation of the Head.

Both a true and symptomatic Phrenitis, have the following Symptoms :

1. A Depravation, not only of the sensible Ideas, but, also, of the internal Senses, of Reason, and of the Affections of the Mind.
2. An increased violent and restless Fierceness, or often turbulent Sleep.
3. An hard Pulse, and a rare and large Respiration.
4. A Countenance, for the most part, highly red, stern and ghastly ; fierce and protuberant Eyes ; and a slight Hemorrhage of the Nose.

P H R

As for the Prognostic, a true Phrenitis generally carries off the Patient on the third, fourth, or seventh Day, which it rarely surpasses; and when it does, and happens to be violent, it degenerates into a Mania, or, when rising somewhat higher, it becomes intolerable. It, also, often terminates in a Lethargy, a Coma, and a Catoche.

An æruginous Vomiting, in consequence of an inflamed Brain; a frequent and indecent Spitting; a Tremor; the Fæces and Urine intercepted, or white; crude Urine; Convulsions; catching at flying Flakes; muddy Eyes; a Gnashing of the Teeth; a Want of Thirst, the general Forerunner of Convulsions; a perpetual Change of Symptoms; and the Subsiding of a tumid Ulcer; are frequent Prefages of great Danger, and of Death.

A true Phrenitis is mortal after a Peripneumony, and the Iliac Passion; and very bad after the Small-pox.

An Inflammation somewhat fixed, and a Roughness of the Fauces tending to the superior Parts, produce a mortal Phrenitis; and the Patients labouring under it grope for Objects which have no Existence, and are greatly oppressed.

That Phrenitis is the worst, which prevents the Patient from submitting to what is necessary for him.

Upon laying open the Bodies of such as have died of a Phrenitis, the Meninges have been found inflamed. Gangrenes, Abscesses, and a Sphacelus of the Brain, are, also, found; or acrid and corroding Ichors are discovered.

From what has been said, 'tis obvious, that the immediate Cause of a true Phrenitis is a primary Inflammation of the Pia and Dura Mater; whereas the Cause of a symptomatic Phrenitis is a like Inflammation arising from the Conveyance of an hot and phlogistic Matter to the Meninges of the Brain.

Whatever is capable of producing such Inflammations, may be considered as immediate Causes of a Phrenitis.

Hence the true Diagnostics, both of a true and symptomatic Phrenitis, are to be taken.

In the Cure of a Phrenitis, the following Circumstances ought to be adverted to:

Varices, and hæmorrhoidal Discharges, are beneficial to phrenitic Patients; as is, also, a *Diarrhæa*. A Pain of the Breast and Feet, or a violent Cough supervening, often terminate a Phrenitis; as does, also, an Hæmorrhage.

A true Phrenitis requires the speedy Use of the strongest Medicines, calculated for removing the Inflammation in the Arteries of the Brain, which are found under the Article INFLAMMATIO: Only it is to be observed, that Venesection is to be copiously instituted, either making one very large Orifice, or opening, at one time, a Vein in the Foot, and the Jugular and Frontal Vein. Diluting, antiphlogistic, and nitrous Decoctions are copiously to be exhibited: Then antiphlogistic Purgatives are to be used, in Conjunction with a large Quantity of a diluting nitrous Drink. Clysters of the like Nature, with an Addition of proper laxative Ingredients, are to be used: The Anus is to be fomented, and the hæmorrhoidal Veins either rubbed with Fig-leaves, or evacuated by the Application of Leeches. Gentle Collutions and Gargarisms for the Mouth are to be frequently used: The Nostrils, Eyes, and Ears, are to be fomented; and the Head is to be shaved. If these Measures are taken without removing the Disorder, we are to use Opiates, wash the Feet, and apply gentle Epispasms and Cupping-glasses to the inferior Parts. The Patient is to be refresh'd in a moderately cool Air, and held in an erect Posture.

But if a Phrenitis is of the symptomatic Kind, and arises from some other inflammatory Disorder, we are carefully to consider, whether the Nature of this primary Disorder will admit of the Measures now recommended: If not, it is to be cured by the Manner usually appropriated to itself; taking care always to use deriving and topical Medicines. *Boerhaav. Aph.*

PHRICI, φρικῶν. See HORROR.

PHRICODES *Febris, quædam est perniciosa*. A Fever attended with an Horror, or Shivering, not only in the Beginning of a Fit, but during a good Part of it; of which Nature is a semitertian Fever. *Galen, de Diff. Febr. Lib. 2. Cap. 9.* The Author of the *Definitiones medicæ* describes it as attended with an Heat, mixed with a Rigor, and a remarkable Lowness of the Pulse, which is insensible to the Touch, and recedes, as it were, inwards: The Belly, in this Case, is tumef'd, and a Rumbling is heard: The Tongue is extremely tumid, and irrigated with an acrid Humour, as with the Saliva. *Fæsius.*

PHRONTIS, φροντίς, properly signifies intense Cogitation, or painful Exercise of the Mind: But in *Hippocrates, Lib. 1. de Morb.* it is taken in a particular Sense for a Disease, where he says, φροντίς ὡς χαλεπὴ, *Phrontis is a troublesome Disorder*; in which, as he describes it, the Patient feels, as it were, a Thorn pricking the abdominal Bowels; is extremely restless; avoids the Light and Company; is only pleased in Obscurity; and is afraid of every thing: The Membrane, which separates the Abdomen from the Thorax, swells outwards; the Patient

P H T

is very fearful of being touched, and suffers greatly thereby: He is molested with terrible Dreams; and imagines that he sees frequently frightful Objects, or dead Persons. This Disorder may be reduced to the Class of melancholy Affections. *Le Clerc. Hist. de la Med.*

PHRYCTE, φρυκτὴ, in *Latin, Fricta*, simply, or without its proper Substantive, is *Resina Colophonia, black Resin*, so called by way of Distinction from the liquid Sort, named ὕψος, *Hygra*: It is called φρυκτὴ, from φρύγω, to torrefy, because it is burnt, or torrefy'd, as *Dioscorides* shews, *Lib. 1. Cap. 93.*

PHRYGANON, φρύγανον. A dry Twig, or Branch fit for Burning. *Varinus.* A Bundle of these dry Sticks, or *Phrygana*, is directed by *Hippocrates, Lib. 1. de Morb. Mul.* to be placed under the Bed of a Woman in Travail, in order to prevent its Feet from coming to the Ground, when it was let fall backwards, from the erect Posture to which it was before raised. This kind of Operation was called σεισμός (*Seismos*), *Concussion*, and order'd to be used for the Promotion of Delivery in difficult Cases.

PHRYGIUS LAPIS. *Offic. Boet. 406. De Laet. 134. Matth. 1380. Aldrov. Mus. Metall. 689. Calc. Mus. 385.* THE PHRYGIAN STONE.

The *Phrygian Stone*, so called, because it is used by the Dyers in *Phrygia*, is produced in *Cappadocia*. The best is pale, moderately ponderous, of no solid Contexture, and distinguished by white Lines, like the Cadmia: They burn it in the following manner; they first wash it over with the best Wine, then cover it with live Coals, and blow them continually; when they perceive it has changed its Colour, and is become redder, they take it out, and extinguish it in the same Wine; they put it under the Coals a second time, and do as before; and even burn it a third time, but take care, that it does not crumble away, nor pass into Soot.

The *Phrygius Lapis*, whether crude or burnt, is an efficacious Astringent: It moderately cleanses, also, and has an escharotic Virtue, and with Cerate cures Ambuitions: It is wash'd like the Cadmia. *Dioscorides, Lib. 5. Cap. 141.*

It is good in Diseases of the Eyes, and for Ulcers, and other Purposes. *Galen.* It is at present unknown in the *English Shops.* *Dale.*

PHRYMION. A Name in *Oribasius, Collect. Medicinal. Lib. 12.* for the *Poterium of Dioscorides.* See POTERIUM.

PHTHARTICOS, φθαρτικός, from φθείρω, to corrupt. Deleterious, deadly; an Epithet applied to Poisons, and their Qualities. *Galen, de S. F. Lib. 5. Cap. 18.* It is opposed to ἀλεξιτερνέον, *alexiterius.* See ALEXITERIA.

PHTHEINAS, φθεινᾶς, from φθίω, to corrupt, signifies tabific: Thus φθεινᾶς αἱ νόσοι are Diseases causing a Tabes, by a Desluxion from the Head upon the Lungs. *Lib. περὶ ἀσθενῶν.* Again, φθεινᾶς put substantively, with the Epithet ἐνεγί (xeræ), signify dry Consumptions, which owe their Original to Tophi, or a Concretion and Induration of Humours in the Lungs, and seem to be opposed to φθινᾶς (phthinodes); which means those who are in a Consumption, proceeding from a Suppuration, or Collection of Pus in the Lungs. See PHTHINODES.

PHTHEIRIASIS. See PHTHIRIASIS.

PHTHEIROCTONON. A Name for the Staveacre, so called from φθίς, a Louse, and κτείνω, to kill, because it destroys Lice.

PHTHINICE, φθινικῶν. *Hippocrates, 2 Prorrhætic.* mentions a Disease called νόσος φθινικῶν, *The Phthinic Disease.* The near Affinity between *phthinic* and *phthisic* has induced some Interpreters to believe that he there speaks of a Phthisis: But the most learned are convinced, that there is a Fault in the Text, and that, instead of φθινικῶν, we are to read φαινικῶν (*Phœnicie*), *A Disease of Phœnicia*: They found their Opinion on their meeting with the Word *Phœnicie*, in the ancient Glossaries on *Hippocrates*, where it is added, that *By this Word is to be understood a Disease common in Phœnicia, and other Eastern Countries, and probably the very same with the Elephantiasis.* What confirms this Explication is, that *Hippocrates*, in the same Place, treats of the Impetigo, Lepra, and Leuce. I shall only observe, that *Galen*, who is the Author of the Glossary above cited, might be mistaken in that respect, so far only as in supposing the Disease of *Phœnicia* to be what they called the *Elephantiasis*, whereas it is possible, that it might have no more than a bare Relation to it; and that, by this *Disease of Phœnicia*, *Hippocrates* might mean the Leprosy of the Jews, which was a Sort of Leuce, and might have something in common with the Elephantiasis, without being exactly the same Distemper. *Le Clerc, Hist. de la Med.*

PHTHINODES, φθινώδης, Tabid, or consumptive. An Epithet for Diseases, and Persons labouring under such Diseases. In *Hippocrates*, it sometimes signifies a Tendency to a Consumption.

PHTHINOPORON, φθινόπωρον. The Autumn.

PHTHI-

P H T

PHTHIRIASIS. The lousy Evil, from *phthir*, a Louse.

The Phthiriasis is a lousy Distemper, to which Children are particularly subject, and sometimes Adults. *Swammerdam*, in his History of the Generation of Insects, tells us, that what we commonly call the *Nit*, is the true Egg from which the Louse is hatched; this Egg requires a moist and warm Place for its Matrix, and then its Multiplication is incredible, in a short Space; and some even suggest, that, in twenty-four Hours, a Louse is not only *Abavus* but *Tritavus*, that is, not only Great Grandfather's Father, but Great Grandfather's Great Grandfather. But if they miss this kindly Repository for their Eggs, as being exposed to the cold Air but for one Day, they are kill'd before they are hatched.

There are reckon'd four Kinds of Lice which molest human Bodies. 1. The *Pediculi*, so called, says *Isidore*, because they are more troublesome by the Motion of their Feet, than their Bite. These generally breed in the Heads of Children, especially if sore or scabby, and often in those of Adults, who are slothful and nasty.

2. *Crab-lice*, so called from their Resemblance to the Crab-fish, which lodge in the Arm-pits, Eye-lids, Eye-brows, and Pudenda of grown Persons. See **MORPIONES**.

3. *Body-lice*, which infest the Bodies, and breed in the Cloaths, of the Slothful and the Nasty: These are of a large Size, oblong, thick, and ending with an acute Point towards the Head.

4. Those generated, according to some, under the Cuticle, being found in the Hands and Feet, of a round Form, like the small Eggs of Butterflies; some of them so minute as to escape the Sight: By their creeping under the Scarf-skin, they excite an intolerable Itching; and sometimes, bursting the Skin, they discover themselves in Clusters; but they generally keep themselves concealed: They are named by some Authors, *Acari*, *Cyrones*, and *Pedecelli*.

The Cause of their Production is, by some, ascribed to the plentiful eating of Figs. *Galen* says, that the Flesh of Vipers breeds them; but, undoubtedly, Slovenliness and Nastiness are the chief Promoters of their Propagation, as affording fit Matrices for hatching their Eggs, and, also, proper Food for their Nourishment.

The lousy Evil is best prevented by wholesome Food, keeping the Body clean, and the Head carefully combed.

When they breed in the Head, let it be well combed, and washed with the following Lixivium.

Take of Wormwood, Stavesacre, Rue, and Horehound, each an Handful; lesser Centaury, half an Handful; Oak-ashes, five Ounces: Make them into a Lixivium, with Spring-water; in which dissolve, of common Salt, two Ounces; Salt of Wormwood, one Ounce: With which let the Head be washed.

Or anoint it with the following Ointment.

Take of the Oils of bitter Almonds, Rue, and Bays, each an Ounce; the Powders of Stavesacre, and Myrrh, each two Drams; Powder of Aloes, one Dram; salted Lard, two Ounces: Mix them with a little Vinegar. Or,

Take of Hogs-lard, Oil of Bays, and black Soap, each half an Ounce; Quick-silver, extinguished with Spittle, a Scruple; Myrrh, and Aloes, each half a Dram; Stavesacre, two Scruples; French Soap, two Drams: Reduce them, in a Mortar, to the Form of an Ointment.

For Body-lice, the wiping the Body with Gilders Cloths is reckon'd an efficacious Remedy, on account of the Quicksilver which they contain. Or,

Take of Stavesacre, and the Powder of red Arsenic, each an Ounce; common Salt, Olive-oil, and Vinegar, each a sufficient Quantity: Mix them together. Or,

Take of Stavesacre, and Powders of Nitre, and white Hellebore, each equal Parts; Oil of bitter Almonds, a sufficient Quantity: Mix them.

Take of Wormwood, and lesser Centaury, each an Handful; Lupins, one Ounce; Stavesacre, and Birthwort, each half a Pound: Boil them in a Lixivium, to which add two Ounces of Salt.

Take of Oil of bitter Almonds, one Ounce; Oils of Rue, and Stavesacre, each half an Ounce; the Powders of lesser Centaury, Myrrh, and Aloes, each a Dram; Quicksilver, half a Dram; rancid salt Lard, two Drams: Make them, with a little Vinegar, into a Liniment.

P H T

The following Lotions and Ointments are taken from *Sennertus*.

Take of long Birthwort, Lupins, and the Leaves of the Pine and Cypress, each equal Parts: Boil them in a sufficient Quantity of Spring-water, for a Lotion for the Head.

Take of the Root of Elecampane, two Ounces; of Bryony, half an Ounce; Beet, and Mercurial Soap, each an Handful; Lupins, an Ounce; Nitre, half an Ounce: Boil them for a Lotion for the Head.

Take of the Powder of Stavesacre, three Drams; Meal of Lupins, half an Ounce; white Agaric, three Drams; native Sulphur, two Drams; of the Gall of a Bull, half an Ounce; Oil of Wormwood, enough to make them into a Liniment.

Take of Stavesacre, an Ounce; Wormwood, and Rue, each half an Ounce; Sulphur, and Nitre, each two Drams: Mix and make them into a Powder, which reduce to the Form of a Liniment, with Oil of Bays.

Much stronger is this;

Take of the Powder of the Seeds of Stavesacre, an Ounce; white Hellebore, three Drams; Quicksilver, extinguish'd with Spittle, two Drams; Hogs-lard, and Oil of Bays, each a sufficient Quantity to make them into an Ointment.

In Infants and Children the Quicksilver must be omitted, as too hazardous, since milder Medicines will answer the Intention.

All the Bitters, sour, and salt Things are here recommended, as, also, Mercury, which, by a singular Property, is said to destroy these Vermin, beyond all other Medicines; but it must be used with very great Caution. *Turner de Morbis Cutaneis*.

Ettmuller advises the Head to be wash'd with a Lixivium, in which have been boiled the Seeds of Stavesacre; and anointed with the following Ointment:

Take of the Oil of Spike, two Drams; the Oil of bitter Almonds, half an Ounce; the Ointment of Tobacco, six Drams: Mix and make them into a Liniment.

This will destroy all those Animals in one Night's time.

The Powder of the *Indian Berries*, sprinkled on the Head, infallibly destroys them. *Codrochius* (who has wrote a particular Treatise of these Animals) says, he has a thousand times experienced the Use of this Powder; and that, in small Quantities, mix'd with Hogs-lard, a boiled Apple, or the like, applied to the Head, it miraculously destroys Lice, more effectually than the Stavesacre, and more safely than Quicksilver.

To destroy the Crab-lice lodging in the Groins of Adults, the anointing the Parts with black Soap is an infallible Remedy, neither is there Occasion to seek for any other. *Turner* proposes Lac Sublimatum; but that is a Medicine not so safe to be used about the Genital Parts. See **MORPIONES**.

Sennertus says, that the Loufiness of the Eye-lids is no contemptible Disorder; for it occasions sharp Fluxions, and the Eyes are at last much prejudiced by it: The same Author enumerates a great many Medicines for it; but there is no Occasion to mention them here; for these and all other Sorts of Lice are easily killed by anointing with black Soap.

Those who would see more relating to this Subject, may consult the following Writers; *Mercurialis*, Lib. 1. Cap. 7. *Lustan. Cent.* 3. *Cur.* 58. *Zwinger. Theatrum Vit. Hum.* Fol. 525. *Tulp. Obs. Lib.* 3. *Cap.* 40. *Forest. Schel. Lib.* 8. *Obs.* 15. *Cardan. Lib. de Subtilitate*, 9. *Scaliger, Exercit.* 94.

PHTHIRION. The same as **PHTHIROCTONON**. *Blancard*.

PHTHISICUS. The same as **PHTHINODES**.

PHTHISIS.

Except the Heart, no Part of the human Body is so useful and necessary for the Preservation of Life, as the Lungs, the genuine Instrument of Sanguification, in which the chylous and nutritive Lymph is intimately mixed with the Blood, and assimilated to it: It is, also, by means of the Lungs we draw that vital Air, or ethereal and elastic Fluid, which communicates Strength to the solid Parts, and a due systolic Motion to the Heart: But, as the Lungs are of more Use and Importance, than most other Parts of the human Body, so they are subject to more terrible Disorders, which we shall endeavour to account for, from their Fabric and Texture. The Lungs, then, consist of membranaceous Vesicles, which receive the Air; of Nerves, which contain an highly subtle Fluid; and of various Kinds of

Vessels, appropriated for the Blood and Lymph; so that, in consequence of so many small Vessels, it is not to be wondered at, if there should happen frequent Congestions, Stagnations, and Obstructions of the Blood in them, which lay a Foundation for various Disorders, among which one of the most considerable is a Phthisis, which is a Consumption or Wasting of the Body, accompanied with a slow Fever, a Difficulty of Breathing, a troublesome and continual Cough, and a copious Expectoration of corrupted and purulent Phlegm and Matter. This Disorder arises from an injured State of the Lungs, by means of an Abscess, or a scirrhus or ulcerous Corruption.

There are various Species of Consumptions accompanied with a Fever, an uneasy Cough, and an Expectoration of peccant and corrupted Matter, which, with respect to their Prognostics and Cure, are widely different from a Phthisis, and ought not, by the Physician, to be confounded with it, since they happen without any considerable Injury to the Lungs. Thus it is certain from Experience, that a Consumption frequently arises from a simple Gonorrhœa, or nocturnal Pollutions long-continued, as we are informed by *Hippocrates* in *L. 6. Ep. Sect. 8. 47.* Nor is it uncommon to observe a Consumption arising from excessive Venery, and a Cacothymy, or depraved State of the nutritious Juices in scorbutic Habits, whilst the Texture of the Lungs is as yet sound and entire. Almost the same thing may be observed in the Atrophy of Children, in which, on account of a scirrhus Induration of the mesaraic Glands, the Chyle cannot easily and freely pass to the Blood; in consequence of which, Nutrition is prevented; and, by this means, the Patient afflicted with a slow Fever, a Difficulty of Breathing, a Cough, and a preternatural Solubility of Body. Nor is that Species of Consumption always to be accounted a Phthisis, in which there is an Extenuation of Body, a slow Fever, a Cough, and more or less sanious Stools; for it frequently happens, that, whilst the Compages of the Lungs is sound, a Sanies is conveyed to the Breast from other Parts, such as the Mesentery, the Uterus, and Kidneys, when labouring under an Abscess, or Ulcer. A Phthisis is, also, to be accurately distinguished from a chronical Cough, accompanied by a copious Expectoration of Phlegm, and succeeded by a Consumption, Loss of Strength, and preternatural Heat, since this last Species of Consumption in the Autumn and Spring frequently seizes Persons subject to catarrhus Disorders, and afflicts them for a considerable time; but may be happily removed by the Force of Nature, and the Assistance of Art.

But, that there may remain no Mistake in distinguishing a Phthisis from other Disorders, we shall here give the Signs of it from *Caelius Aurelianus*, who, in *Lib. 2. Cap. 14.* has the following Passage: "A Phthisis is frequently produced by a previous Spitting of Blood, and sometimes by a gentle, but long-continued Catarrh, or Cough, by which the Lungs are, at first, gently lacerated, and then ulcerated. A Phthisis is accompanied with a latent Fever, which begins in the Evening, is alleviated in the Morning, and attended with a violent Cough at those times. At first a small, but afterwards a large Quantity of sanious Spit is expectorated. Those who fall into a Phthisis, in consequence of an Hæmorrhage, discharge, at first, a bloody Spit, which, afterwards, becomes seculent, and then livid, or green, and, last of all, white and purulent, sometimes salt, and, at others, sweet; whilst the Voice is hoarse, and shrill, the Breathing difficult, the Cheeks red, and the rest of the Body of a cineritious Colour. A Phthisis is, also, accompanied with a Loathing of Food, and a preternatural Thirst. Some Patients have, as it were, a Sense of a Wound in their Lungs, and even expectorate Fibres of them. The Pulse is weak, hard, and formicular. A Phthisis is, also, accompanied with an Inflation of the Feet. As the Disorder increases, a Flux is brought on; and the Phlegm discharged, when thrown upon live Coals, is of a fetid and disagreeable Smell." *Hippocrates*, in *Lib. de Morbis*, delivers the Signs of an approaching Phthisis in the following manner: "A Patient, says he, is rendered Phthisical, when the Phlegm falls down from the Head upon the Lungs; at first, for the most part, insensibly; and excites a gentle Cough: The Spit is, also, bitterer than usual, and sometimes there is a gentle Heat of the Body. But, in Process of Time, the Lungs, and especially their internal Parts, are exulcerated by putrid Phlegm; the Breast is oppressed by a Sense of Weight, and acute Pain is perceived both in the anterior and posterior Parts, and the Heat of the Body becomes more intense. The farther a Phthisis proceeds, the more unmixed Pus is discharged, the more intense the Fever becomes; the Cough is more violent and continued; the Patient is racked with a Sense of Hunger, and a Diarrhœa comes on."

Having thus specified the Marks and Characteristics of a Phthisis, we now come, from a Consideration of the Phenomena

observable in the Bodies of those who have died of that Disorder, to investigate the Causes of the several Symptoms with which it is accompanied. First, then, in all Persons, who have died of a Phthisis, either the Right, or Left, or both Lobes of the Lungs adhere so firmly to the Pleura and Ribs, or to the Vertebrae of the Back, that they cannot, without great Difficulty, be separated with the Knife; and the Part, in which they adhere, is generally full of a putrid Serum, or Ichor. In some Phthisical Patients, especially such as have been afflicted with an Empyema, I have observed one Lobe of the Lungs totally consumed by the previous long-continued Disorder of the Breast, and the other inflamed; which Circumstances prove the Cause of the Patient's Death. For the most part, there are, also, in one of the Lobes of the Lungs, Impostumations, or closed Ulcers, of different Bulks, and sometimes more, sometimes fewer in Number; which, when laid open, contain partly a thick, and partly a fluid Pus. When an Incision is made, especially in the superior Part of either of the Lobes of the Lungs, there are found pretty large Cavities filled with Pus and Phlegm, almost of the same Kind and Colour with that before evacuated by the Mouth. Sometimes, also, in the Lungs, when become knotty and scirrhus, there are found spreading and fistulous Ulcers, like Cancers, which prey upon the adjacent Parts, and contain a sanguineous and fetid Ichor. There are, also, Instances of scirrhus Tubercles, hard, like the Stones of Fruit, and containing a tophaceous, calculous, and putrid Matter, found in the Lungs. It is, also, to be observed, that, in Phthisical Patients, the Heart is, for the most part, flaccid, and its Vessels infarcted with polypous Concretions; a memorable Instance of which is found in *M. N. C. Decad. 2. Obs. 35.* In the Pericardium, also, and frequently in the Cavity of the Breast, there is a large Quantity of impure and fetid Serum. As for the Abdomen, and other Parts, the Vessels are generally without Blood, the Liver large and pale, the Glands of the Mesentery tumefied, the Omentum destroyed, and all the Fat, both of the internal and external Parts, appears to the View: Those, who desire a farther Knowledge of the Phenomena observed in dissecting Phthisical Patients, may consult *M. N. C. Decad. 1. An. 1. & 2. Decad. 2. An. 4. Obs. 45. 118. An. 8. & 9. Cent. 3. & 4. Obs. 118. Cent. 8. Obs. 105. Cent. 9. Obs. 16. & 26. Cent. 10. Obs. 143. Vorzafcha. Obs. 100. Loffius, Obs. 11. Parvius, Obs. 22. Platerus, Lib. 3. Obs. 189. & 690. and Pezoldus, Obs. 63, 64. 74. and 92.*

Hence it is sufficiently obvious, how violent the Injury done to the Lungs must be in a Phthisis, in order to induce Death. We now come to inquire into the Causes productive of such an Injury; among which the most considerable are scirrhus Stagnations in the vascular, vesicular, and membranous Substance of the Lungs; which, if considerable, are not, without the greatest Difficulty, to be removed, on account of the continual and reciprocal Passage of the Air. *Hippocrates*, in *Lib. de intern. Affect. Cap. 4.* speaks concerning this in the following manner: "When the Lungs receive Blood, or a salt Phlegm, without again discharging them, but retain them impacted in them, Tubercles are formed, and come to a Suppuration in the Lungs. From the Beginning of the Disorder, through its whole Course, there is an acute, dry Cough, a Rigor and Fever, a Pain in the Back and Breast; and sometimes in the Sides. The Breathing, also, is so violent, as to force the Patient to sit in an erect Posture. Then the Pus is corrupted, and expectorated in large Quantities." *Aræteus*, also, in *Chron. L. 1. Cap. 8.* has given us nearly the same Description of Phthisical Patients: "Before, says he, Phthisical Patients can discover their Disorder by manifest Signs, especially by putrid and purulent Spit, they have Tubercles, or scirrhus Knots, formed of a viscous and toughish Matter, which gradually becomes hard in their Lungs. Thus they live in a consumptive State for several Years before these Tubercles are corrupted, and formed into Abscesses. If there are such Tubercles in the Lungs, the Patient is afflicted with a dry, strong, and sonorous Cough, an acute and pungent Pain of the Breast, a Difficulty of Breathing, and a kind of Uneasiness and Resistance in the Breast, from the profound Attraction and Inspiration of the Air. Then the Cough becomes more violent, especially after strong Exercise."

Though this Doctrine of *Hippocrates* and *Aræteus* is strictly agreeable to Truth, yet we shall, for the better Illustration of the Subject, add some Observations. These Tubercles, filled with a viscid Matter, constitute the Beginning of the Abscesses, which are nothing else, but Ulcers of different Bulks, surrounded in a peculiar Membrane. These Impostumations, when small, are sometimes expectorated by Cough; but when they become large, and break internally, Abscesses and Cavities are formed; a purulent copious Spit, mixed with Phlegm, is expectorated; and then a true Phthisis is present. Sometimes, also, these scirrhus Knots, which are long

long so latent, as to produce only a dry Cough, in consequence of their acrid Matter retained and pent up, degenerate into cancerous, fistulous, spreading, and fetid Ulcers; which so consume and putrefy the adjacent Parts, that, according to *Forestus*, in *Lib. 16. Obs. 14. and 53.* Portions of the Aspera Arteria have been spit up; and, according to *Sylvius*, in *Obs. Lib. 2. Cap. 12.* Ramifications of the Pulmonary Vein have been evacuated in Coughing.

There are, also, other Beginnings of a Phthisis, especially an Hæmoptysis, when ill-treated, or when a large Quantity of Blood is lost; for then the Blood is easily extravasated from the small Vessels of the Lungs into their Air-bladders; and, becoming stagnant, it putrefies, corrodes the adjacent Parts, forms Sinuses, or is reduced into Nodes and Tubercles. And I can, from my own Experience, affirm, that almost half of the Phthisical Patients, who have subjected themselves to my Care, received the Origin of their Disorder from a previous ill-cured Spitting of Blood. Among the Beginnings of a Phthisis we may, also, with the Antients, reckon a salt Catarrh for a long time affecting the Breast, and which is frequently succeeded by a Phthisis.

We now come to inquire into the Origin of these Causes. The Stagnation, then, of the Blood firmly impacted in the Vessels is the Origin, not only of a Phthisis, but, also, several other Disorders; for when the Fluids do not circulate, they lose their former temperate Nature, become impure, saline, and acrid; or, by filling the minute Vessels too full, produce Obstructions, Indurations, and Scirrhuses. Now these fatal Stagnations of Blood and Humours, in the minute Vessels of the Lungs, proceed from too impetuous and copious Congestions of the Humours to a Part already too faint and languid, so that the Veins cannot return so much as they received from the Arteries.

But there are various other Causes, which are capable of inducing such a fatal Stagnation of the Blood and Humours in the Lungs, and, consequently, contributing, in a remote manner, to the Production of a Phthisis. The most considerable of these Causes is, an hereditary Disposition, conveyed from Parents to Children; in consequence of which they readily fall into a Phthisis, when any slight Cause occurs. This is confirmed, not only by Experience, but, also, by the Authority of the most celebrated Physicians. Thus *Fernelius*, in *Patholog. Lib. 5. Cap. 10.* informs us, “That such as are sprung from consumptive Parents, by a kind of hereditary Right, become consumptive; and we often observe, that a Phthisis rages in such Families.” The Reason of this is obvious; for since this Predisposition to Diseases received from the Parents principally consists in a bad Conformation of the solid Parts, or such a Laxity of the Fibres and Vessels, as is insufficient, with a proper Effort, to promote the Motion of the Fluids conveyed to them, the Reason is plain, why those, who have naturally weak and flaccid Lungs, should be more subject than others to Disorders of the Breast, and especially to a Phthisis. Among the Persons subject to this Disorder, we may, also, with *Hippocrates*, reckon those of narrow and depressed Chests, whose Scapulae are prominent, like Wings, whose Ribs are protuberant, whose Necks are oblong, or who are gibbous.

It is, also, certain, not only from Experience, but, also, from the Authority of *Hippocrates*, in *Aph. 9. Sect. 5.* that Persons of slender and tender Habits, of tall Statures, and between the eighteenth and thirty-fifth Years of their Age, are highly subject, not only to a Spitting of Blood, but, also, to a Phthisis; for no other Reason, but because, at this Period of Life, the Vessels are more tender, and easily expanded, than in Persons farther advanced in Years. But generally a Spitting of Blood and Phthisis happen most readily to full-grown and young Persons, who, being of a sanguineous and choleric Habit, are easily subject to Commotions of Mind, and have had frequent Hæmorrhages from the Nose, in their Childhood, especially when they are over-heated by too violent Exercise; for then the Blood, being copiously and impetuously conveyed to the superior Parts and Breast, cannot return freely to the Heart through the minute Vessels of the Pulmonary Artery and Vein. Hence, in the larger Ramifications, the stagnant Blood must necessarily produce Expansions, Ruptures, and Extravasations.

This Disorder is, also, frequently produced by an unreasonable Drinking of spirituous Liquors. Nor is it difficult to prove this, since it is almost universally known, that, in the Countries productive of Wines, all the Disorders incident to the Breast, and especially a Spitting of Blood, and a Phthisis, are far more frequent, than in other Climates. Hence *Hæfferus*, in *Hercule Med. Lib. 1. Cap. 3.* justly concludes, that a Phthisis being so endemial, and destroying such Numbers in *Lower Austria*, is owing to nothing, but their excessive Use of generous Wine, especially in the Morning.

We now proceed to consider those Causes which produce the Defluxion of saltish Humours in the Breast. This Humour the Antients in general asserted to come from the Head, as if

all Humours conveyed to the Breast proceeded from it: But this Opinion is not sufficiently perspicuous, and founded on Experience. Too copious a Congestion of serous Blood to the Breast, and especially to the Fauces, and Whole of the Aspera Arteria, which is covered with an internal glandular Coat, is rather to be accused, especially in serous Patients, and those, who, during their whole Lives, have been subject to Stuffings of the Head, Coryzas, and frequent Catarrhs; for if more Blood and Serum is conveyed to the glandular Parts through the Arteries, than can return through the Veins, there is a great Secretion of the Serum, which, increasing in Quantity, is coagulated by the Admission of the free Air, and, at last, often expectorated in large Quantities. In Process of Time, when the Disorder continues, and other Causes concur, such as Crudities arising from a bad Diet, or Indigestion, an obstructed Perspiration, or profound Grief, the Serum acquires a saline and corrosive Nature; in consequence of which, in Process of Time, it corrodes the Vesicles and tender Vessels of the Lungs.

From what has been said, we may easily understand, how injurious cold and northerly Winds, rainy, cloudy, and cold Weather, which, by relaxing the Tone of the Pulmonary Vessels, accumulate the Sordes in them, must necessarily be to consumptive and phthisical Patients; so that, with *Hippocrates*, in *Aph. 10. Sect. 3.* we may justly affirm, that the Autumn is prejudicial to consumptive Patients. And, indeed, the Influence of the Air is not more considerable in producing any Disorders, than those of the Breast, and especially a Phthisis. Hence *Tulpius*, in *Obs. Med. Lib. 2. Cap. 10.* justly assigns the State of the Air, as the Cause why Impostumations, and Phthisical Indispositions, are so frequent in *Holland*, in marshy Places, and such as are exposed to an Air perpetually impregnated with putrid Vapours.

We now come to investigate those Disorders, which generally dispose to a Phthisis, among which we may justly reckon the Small-pox. I know many Children, and young Persons, who, after the Small-pox, have been subjected to various Disorders of the Breast, which have lasted for several Years, such as a dry Cough, an acute Sense of Pain, a Difficulty of Breathing, a Consumption, and a slow Fever, who, at last, upon the Formation of an Abscess, have died, among whom was the Prince of *Saxony*. Almost the same Misfortunes are produced after the Measles; for, in these exanthematous Disorders, the Serum is highly acrimonious, and, not only in the Beginning of these Disorders, remaining firmly in the nervous Membranes of the Lungs, excites a dry and uneasy Cough, but, also, leaves a considerable Weakness in the Lungs, an Expulsion of the peccant Matter being made to the Surface of the Body. Now, if the Patients, before the whole peccant Matter is carried off by Transpiration, expose themselves to the free Air, especially in the Spring or Autumn, it readily happens, that the Remains of the peccant Matter, receding to the internal Parts, acts upon, irritates, and exulcerates the weakened Lungs: See *Thomas Bartholine, Cent. 4. Inst. 43.* and *Michæli, in Prax. Clin. Part. 1. Lib. 3. Cap. 5.*

It, also, frequently happens, that, after Effervescences of the Skin, such as the Itch, the Gutta Rosacea, scorbutic and purple Spots, are repelled, a Phthisis is often produced. The same Disorder is, also, frequently caused by the Suppression of copious Sweats, by the unseasonable Treatment of Ulcers of the Head and Feet, and by the too speedy Consolidation of Fontanels. Nor are there wanting Instances, in which a Phthisis has been produced by the Repression, or unskillful Treatment, of an Erysipelas, and Gout-pains; for since, by this means, the acrid and caustic Matter is retained in the Habit, and resorbed through the Veins by the Mass of Blood, hence it happens, that, being conveyed to the nervous and tender Membranes of the Lungs, it is firmly impacted in them, and, by irritating, constricts them. Hence the constricted Vessels must, at last, be obstructed and corroded. I, also, remember to have seen a Phthisis produced, in consequence of curing Tumors under the Axilla; and behind the Ears; so, also we may readily suppose a Phthisis frequently generated by a Suppression of the hæmorrhoidal and menstrual Discharges.

There are, also, other Instances, though not common, in which, besides a Spitting of Blood, a Phthisis may, in some Patients, be induced by other Hæmorrhages; and this principally happens in those Patients, who, either from hereditary Disposition, or from other Causes, having brought on a Want of due Tone in the Lungs, are disposed to this Disorder. This Doctrine is, also, confirmed by Experience, which informs us, that not only a Redundance, but, also, a Defect of Blood has a strong Tendency to produce Stagnations. Hence those, who place the proximate Cause of a Phthisis in a Plethora, only palpably contradict Reason and Experience.

It is disputed, among Physicians, whether a Phthisis is contagious: But I do not hesitate to assert, that it is; or, at least, to assert, that, if the Miasma of this Disorder is not sufficient

to induce a Phthisis, it is, nevertheless, capable of promoting it, if there is already a Disposition to it; for all ulcerous and corrupted Matter is of so surprising and contagious a Nature, that many malignant and contagious Disorders, such as the Itch, the Leprosy, the Small-pox, old sordid Ulcers, pestilential Carbuncles, and Dysenteries, are to be accounted for from hence. Nor am I of Opinion, that the Nature of the Phthisical Miasma is so malignant, as suddenly, and, at a Distance, to prove infectious; but that it only does so to such as continually converse with Phthisical Patients. This Doctrine is confirmed to us by some of the most celebrated Physicians. Thus *Riverius*, in *Cent. 1. Obs. 99.* gives us an Instance of a Maid, who became Phthisical by attending her Mistress, who was in that State, Day and Night; and, in *Cent. 4. Obs. 92.* he mentions a Girl infected by her Sister, who had become Phthisical by giving the Breast to a Man in that Condition. *Schenckius*, also, in *Lib. 3. Obs. 133.* informs us, that the Spit of Persons labouring under a confirmed Phthisis is so contagious, that a Physician, only by smelling it, became Phthisical. A Phthisis, produced by Contagion, is, also, described in *M. N. C. Cent. 9. Obs. 26.*

As for the Prognostic of this Disorder, that a true Phthisis is a violent Disease, and not to be cured without the greatest Difficulty, is not only known to the Vulgar by many fatal Instances, but, also, confirmed by long Experience to the Physician. Thus *Hippocrates*, in *Lib. 1. de Morb.* informs us, "That when Consumptions happen, they necessarily prove mortal." He is seconded in this by *Galen*, in *Lib. de Locis affect. Cap. 8.* and *5 Meth. Medend. Cap. 1. & 8.* *Celsus*, in *Lib. 3. Cap. 22.* informs us, "That a true Phthisis ought to have proper Measures taken with it in the Beginning, since, when it becomes inveterate, it is not easily cured." Among latter Authors, see, with respect to the Difficulty of curing a Phthisis, *Forstus*, in *Observ. 45. Lib. 16.* *Rodericus a Fenseca*, *Tom. 1. Consult. 58. Tom. 2. Consult. 48.* and *Timæus a Guldenklec*, in *Epist. Lib. 3. Cap. 2.* where these Words occur: "I innocently confess, that, during the whole Course of my Practice for thirty-seven Years, I could never totally restore such as had their Lungs ulcerated; though I left no Means untried, which could in the least contribute to the Cure of this Disorder: Nor have I seen any one in this Condition totally recovered by the most celebrated Physicians."

But tho' the Cure of a Phthisis is very difficult, and even impossible, when the Disorder discovers itself by such manifest Signs, as to appear to the Vulgar, yet I would not affirm the like of every Phthisis, especially when as yet in its Beginning; for I know several Instances, in which, after Wounds of the Lungs, a Spitting of Blood, a Rupture of the Vessels, a Pleurisy, and Peripneumony, the Patients have laboured under an Abscess and Impostumation of the Breast, but have, nevertheless, been totally cured, by taking due Measures in time. Besides, I, and others, have frequently observed many sprung from Phthisical Parents, who have had their Breasts depressed, and their Scapulae prominent, like Wings; who, being addicted to Anger, had in their Youth frequent Hæmorrhages from the Nose, without any external Cause; who have had saline Defluxions on the Breast and Fauces, accompanied with a dry and violent Cough, even in the Summer; who have surprisingly lost their Flesh, and perceived a Heat in the Palms of their Hands, whilst their Cheeks as yet remain florid; totally cured by proper Medicines, and a due Regimen. I have, also, seen Abscesses of the Lungs, where a large Quantity of white equal Pus, of one Colour, has been expectorated, but where the other Parts of the Lungs have not as yet been corrupted, nor spoiled, with scirrhus Indurations, and ulcerous Fistulas, and where the Vessels of the Heart and Lungs have not been infarcted with polypous Concretions, happily cured by proper Remedies, and a due Regimen.

But it may here be asked, by way of Objection to my Doctrine, Why is it, that even beginning Phthisical Disorders are so rarely cured? But this is frequently brought about by various Causes, the most considerable of which seems to be, that we are not always sufficiently ascertained of the Presence, Nature, and genuine Causes, of a true Phthisis, by evident diagnostic Signs. Thus *Fernelius*, in *Patholog. Lib. 5. Cap. 10.* informs us, "That a latent Abscess, at first, neither known to the Physician, nor Patient, is often the Cause of this Disorder; in consequence of which, the Patient neither desists from his usual Business, nor thinks himself afflicted with any Disease; but bears the secret Cause of his Death in his Breast, without knowing it. However, some have, in a Quarter of an Hour, died unexpectedly of this Disorder, in whom, when dissected, no other Cause of their Death could be discovered, than the sudden Breaking of an Impostumation in the Lungs; by which the Patient was suffocated. But all such Patients are, before the Rupture of the Abscess, afflicted with a Cough, a Spitting of Blood, an Heaviness of

"the Body, a slight Oppression of the Breast, and a Difficulty of Breathing, which rarely accompany a Consumption, but are Signs frequently common to other Disorders." Besides, we may be convinced of the difficult Diagnostics of a Phthisis by the frequent Errors committed, in this respect, by the most celebrated Physicians. Thus many are accounted Phthisical, who, labouring under a chronical Cough, accompanied with a catarrhal Defluxion, discharge a thick Matter of a whitish-green Colour; or who are afflicted with a stomachic, or hypochondriac Cough, arising from the Sordes of the Primæ Viæ falling upon the Lungs. A moist Asthma, especially, when it arises after a Suppression of the Menstrues, or Hæmorrhoids, and a consequent Regurgitation and Congestion of the Humour to the Breast, is frequently taken for a Phthisis. It is, also, certain, that a slow Fever, accompanied with a Cough, a sudden Extenuation of the Body, and colliquative Sweats, which sometimes succeed Arthritic Pains, the Gout, or Scurvy, is, also, confounded with a Phthisis; whereas, in the former of these Disorders, there is no Solution of Continuity in the Lungs. Since, therefore, the Knowledge of a Pulmonary Consumption is so difficult, hence we may infer, how uncertain and precarious the Cure of this Disorder must be.

There is, also, another equally important Cause, which hinders the Cure of a Phthisis, and of an Hæctic arising from it; which is, that there are few Physicians, who know, with due Caution and Circumspection, to use proper Medicines for this Disorder; for, if in any Disorder, certainly in a Phthisis, the Caution of the Physician is necessary, on account of the so great Contra-indication of Remedies; for a Phthisis requires laxative and moistening Medicines, gentle Traumaties and Astringents, and sometimes mild Anodynes, which, unless exhibited with due Caution, at a proper time, and with sufficient Regard to the Circumstances of the Patient, are so far from affording any Relief, that they rather increase the Disorder.

Having taken a general View of the Prognostics of a Phthisis, we now come to consider its Terminations or Events, whether salutary or fatal. First, then, 'tis a very bad Sign, when the hæctic Heat is more and more increased; when, in the Morning, the Pulse is quicker than usual, and when the Flesh and Strength are consumed, without being in the least recruited by Sleep. Which Misfortunes generally the rather happen, if, when there is a large Quantity of Pus, there is only a small Portion of it expectorated; for then it becomes more acrid and filthy, and, when thrown on the Coals, diffuses a fetid Smell, the more the Fever is, also, increased. If, besides, there is a great Difficulty of Breathing, accompanied with a Dread of Suffocation; if the Patient cannot lie on that Side, where the injured Lobe of the Lungs is; if his Breath is of a cadaverous Smell, and his Voice hoarse; if he is afflicted with colliquative Sweats, a Diarrhœa, and a Swelling of his Feet, sometimes accompanied with Pain; 'tis certain that Death is not far off. If the Expectoration is totally suppressed, the Patients gradually, but especially in an erect Posture of the Head, die, retaining their Reason.

But greater Hopes are to be entertained, if there is still a considerable Degree of Strength, and the Respiration free, if the Appetite and Digestion are entire, if the Spit expectorated is white and equal, and if there is no hæctic Fever. The Hopes of Recovery are still the greater, if the Patient is of a good Habit of Body; if he has a large Chest; has no hereditary Disposition to the Disorder; and if his Heat becomes more mild, and the Substance of his Stools is compact; for, by means of these Circumstances, Phthisical Patients, especially when they use a proper Regimen and Medicines, may often protract Life for a great many Years. Thus *Willis*, in *Lib. de Medicament. Operat. Sect. 1. Cap. 6. de Tabe seu Phthisi*, speaks in the following manner: "It sometimes happens, says he, that a Cavity, or, perhaps, two are formed in the Lungs with callous Sides every-where, so that the Matter collected in them is not convey'd to the Mass of Blood, but is every Day totally expectorated, tho' its Quantity should be very large. Persons in this Situation have only, as it were, a Fontanel in their Lungs; and, although they should every Morning expectorate a large Quantity of thick, or yellow, and even, as it were, purulent Spit, and a small Quantity of the same throughout the Day, yet in other respects, they enjoy sufficiently good Health, breathe freely and easily, eat and sleep well, have a due Quantity of Flesh, or, at least, are blessed with a good Habit of Body, and are frequently cured. Hence some are said to have laboured under a Phthisis for thirty or forty Years, and even not to have had their Lives shortened by this Disease." And, with respect to Ulcers of the Lungs, 'tis observable, that they may continue for several Years without any considerable Decay of the Body, whilst the other Viscera remain sound and entire. See *Kerkringius*, in *Specilegio Anatom. Obs. 72.* and *Barthol. Cent. 2. Hist. 14.* Nor is this difficult to be conceived; for as Nature sometimes advantageously expels peccant and recrementitious Matter by an Ulcer of the Extremities, or by an artificial Ulcer, such as a Fontanel, so I see no Reason, why the same Circumstance should not sometimes happen in Ulcers of the Lungs.

P H T

The Physician ought, also, to be well acquainted with the particular Signs which manifest the Recovery of phthical Patients, which are, by *Aretæus*, in *Lib. 3. Cap. 1.* excellently enumerated in the following manner. "When phthical Patients begin to grow better, the Cough seizes less frequently, and at longer Intervals; a larger Quantity of sanious and more moist Spit is expectorated; much aqueous Matter is evacuated by Stool; the Urine is copiously discharged, tho' it has as yet no Sediment; the Voice becomes more clear and sonorous, the Sleeps are sufficiently long, the Præcordia relieved, and the Pain remitting i-, sometimes, transferred to the Scapulæ; the Difficulty of Breathing is gentle and less frequent, but accompanied with an Asperity of the Voice; and, when these Things happen, the Patients recover."

The CURE.

The Application of proper Remedies, in a Phthisis, is widely different, according to the different State of the Patient, with respect to Strength, the Time and Causes of the Disorder. The Method of treating a Phthisis in general, may be divided into curative, mitigative, and preservative. The first is to be taken when there are such Causes, such Circumstances, and such a Condition of the Patient, as to lay a Foundation for expecting a Recovery, by means of proper Medicines. The mitigative Method is to be taken, when the Force of the Disease is so great, that it will not yield to the best Medicines; in which Case we are to mitigate the most urgent Symptoms, prevent such as are worse, and, by that means, protract Life as long as possible. And as the preservative Method is the best, the most easy and safe, against all terrible Disorders, so it is of the highest Importance in a beginning Phthisis.

As for the curative Method, it is principally to be used, when, in consequence of a broken impostumation, an open Abscess is formed, and a large Quantity of Pus expectorated; which most generally happens after the unlucky Termination of a Pleurisy, or Peripneumony; after a Spitting of Blood; after Wounds of the Lungs, whilst the rest of their Substance is sound, and neither corroded, nor scirrhus. In this Case, the best and safest Cure is Milk duly used, by which I have known many phthical Patients brought from the Gates of Death, and restored to perfect Health; for no Medicine has longer, or more universally, been found efficacious in the Cure of a Phthisis, than Milk.

The most ancient Physicians warmly recommended Milk for the Cure of this Disorder, as is obvious from various Passages of *Hippocrates*. And *Galen*, who greatly extols Milk for a Phthisis, in *Lib. 5. Meth. Medend. Cap. 12.* mentions a Place called *Stabias*, to which, on account of the Purity of the Air, the fine Pasture for Cattle, and the consequent salubrious Quality of the Milk, there was a great Conflux of phthical Patients, just as, in our Days, the Valetudinary and Infirm resort to the medicinal Springs. This Method of Cure was known in *Italy* above an hundred Years ago; for the celebrated *Andreas Baccius*, in *Lib. 4. de Theriis*, informs us, "That the *Neapolitan* Physicians, as the last Resource, send phthical Patients, such as spit Blood, or those afflicted with any Ulcers of the Thorax to *Stabias*, with so great Success, that some remain in that healthful Part all their Lives."

Aretæus, also, one of the most skilful of the ancient Physicians, in *Lib. 6. de Morb Chron.* does not hesitate to affirm, that phthical Patients stand in need of no other Thing for their Recovery, but the liberal Use of Milk. *Trallian*, also, who, in his Work *de Re Medica*, greatly extols Milk in all Disorders of the Breast, in *Lib. 7.* has the following remarkable Passages: "If the whole Body, not having Nourishment convey'd to it, begins to decay manifestly, and if there is not much Pus in the Thorax, Milk alone ought to be exhibited to them; and, for this Purpose, that of Asses is best, because it is an excellent Purgative." In another Place he speaks in the following manner: "I have frequently seen those afflicted with a Difficulty of Breathing, relieved by the due and proper Use of Milk, which removes the peccant Matter lodged in the Cavities of the Lungs." And, in the Part already quoted, when speaking of an Hæmoptysis, he says, "Let all those afflicted with a Spitting of Blood, use Milk; for no Medicine nor Aliment is so useful and beneficial to them as Milk; and those, who, in the Beginning of this Disorder, use Milk alone for a long time, are totally recovered." Thus, says that Author, I knew a certain Man, who, by using Milk for a whole Year, and abstaining from Wine, was totally freed from a Spitting of Blood, and Pus, so that he did not afterwards fall into a Phthisis."

It may, also, be shewn from Reason, without the Evidence of Experience, that Milk is an efficacious Remedy in Disorders of the Breast. But 'tis to be observed, that all Milks are not of the same Kind, and of the same Efficacy for all Purposes, since, according to the Diversity of Animals, and their respective Foods, they are possessed of different and peculiar Qualities, which are to be considered apart. First, then, Asses Milk, which was always greatly esteemed by the Antients, contains a great deal of sweet Serum, but a very small Quantity of earthy, calcous, and

P H T

pinguious Substance; for which Reason, it is not easily coagulated, and consequently but very unfit for Butter and Cheese. Its Whey is abstergent, laxative, moistening, and proper for correcting the Acrimony of the Humours. Goats Milk does not contain so large a Quantity of Whey, as that of Asses; nor is it of so laxative and abstergent a Nature, but of a thicker Consistence. And as Goats eat the Leaves of Trees, which contain something of a resinous Quality, their Milk is very efficacious for the Consolidation of suppurated Parts. Cows Milk is more pinguious, contains a large Quantity of Earth, but less Whey; for which Reason it generally yields a great deal of Butter and Cheese. This Species of Milk is of a temperating, nutritive, and consolidating Virtue. Womens Milk, for medicinal Purposes, is preferable to all others; for it is the sweetest of them all, and its nutritive Quality is sufficiently observable in Infants. The Virtues of Milk are, also, different, according to the Diversity of Herbs and Pasturage, which Animals eat. Hence Milk, in the Spring, is highly salutary, because, at that time, the Vegetables abound with temperate Juices; whereas Milk in the Winter is accounted less salutary, because then Animals feed on Hay and Straw.

Hence we may easily judge, that in all Disorders of the Breast, and an universal Decay or Wasting of the Body, Milk may be accounted a Medicine proper for answering all Intentions: For, first, we find nothing more efficacious than Milk, especially that of Cows, for correcting, mitigating, and allaying the Acrimony of the Humours, which is the principal Cause of the Irritation, the violent Cough, and the Corrosion; for as this Species of Milk is capable of breaking the noxious Force of corrosive atenical Poison, so 'tis much more efficacious in sheathing up and obdounding the saline Spicula lodged in the Fluids of the human Body. But when the Invention is to deterge viscid Humours, to cleanse Ulcers, to render the Body soluble, to provoke Urine, and derive the Afflux of the Humours from the Part affected, Asses Milk is of all others the most efficacious, on account of the large Quantity of sweet abstergent Whey it contains. When wounded Parts are to be consolidated and conglutinated, Goats Milk is best for answering the Intention. For nourishing wasted Parts, and restoring Strength, nothing is more effectual than Womens Milk, especially when suck'd immediately from the Breasts, without any Access of the Air, by which its spirituous Principle is exhaued, and flies off. With respect to this Milk, the learned *Hæfist*, in *Epist. ad Verzascham*, speaks thus: "There is certainly a divine Quality both in Womens and in Asses Milk, which I could not have believed, if I had not had the Evidence of my Senses for it; for by their means I have, with my own Eyes, seen Persons rendered, as it were, entirely new; and, by a due Use of these two Species of Milk, many have acquired not only a sounder Habit, but, also, a better Colour, and more Strength."

Not only Milk, but, also, Whey, when duly prepared, is highly efficacious, and even sometimes more powerful than Milk, in curing the chronical Disorders of the Lungs, and the other Viscera: For if the Obstructions of the small Vessels of the Viscera, which generally lay a Foundation for chronical Disorders, are to be removed; if the viscid and tenacious Humours are to be dissolved; if the Emunctories are to be kept open, and the Heat of the Parts allay'd by proper Moisture; Whey, prepared of whatever Milk, is preferable to the Milk itself. See *LAC*.

Hence the Reason is obvious, why not only in the Cure of Disorders of the Breast, but, also, in that of the most terrible and obstinate Diseases, the most skilful Physicians, both among the Antients and Moderns, have always greatly recommended Milk. But the whole Secret consists in the due Use of it, both for mitigating and curing Diseases; for, if either Aliments or Medicines should be improperly used, they prove more detrimental than beneficial. This should be adverted to, especially by those of the Moderns, who strenuously endeavour to destroy and discredit the medicinal Use of Milk.

But tho' the Use of Milk and Whey is sufficient to answer many Intentions in the Cure of a Phthisis, yet 'tis equally certain, that its divine Energy, in producing different Effects, may be assisted and augmented by various means: For, first, the Efficacy of Milk is surprisngly increased, and rendered truly Medicinal, if the Animals, whose Milk we use, are fed with Substances accommodated to the Intention of Cure, for, from the different Aliments which Animals and Women use, the Milk they afford, also, acquires a different Quality, since 'tis certain from Experience, that a Purgative exhibited to the Nurse is, with the Milk, convey'd to the Child upon whom it operates. The Antients are, therefore, to be commended, who, in order to render their Milk more efficacious, gave their Asses and Goats, among their Food, such Herbs as were possessed of a specific Virtue against the Disease they intended to cure. Hence *Galen*, in the Part before-quoted, mentions the Herbs growing in *Stabias*, such as Grass, Knot-grass, Bastard-baum, the Bramble, Ivy, Shrub-trefoil, the Mastic-tree, and some others, by eating which the Milk of the Animals was rendered highly salutary. This Custom I have successfully used, when, in order to the Absterion and Depuration of any Part affected, I have ordered Barley, Scabious, Scordium, Chervil, *German* Leopard's-bane, Ilyssop, Paul's Betony, and white Horehound,

to be mixed with the Food of the Animals, from which the Milk was to taken. But, when the Intention was to consolidate, I have ordered their Food to be mixed with the several Species of Plantain, Ground-ivy, Agrimony, Yarrow, Sanicle, the greater Confound, and Lungwort.

But there are still other Methods of augmenting the medicinal Virtues of Milk, according to various Intentions; the most considerable of which is the mixing Milk with mineral Waters; a Practice, by me, first introduced into *Germany*; for when, upwards of thirty Years ago, I was, by a chymical Analysis, investigating the Principles of the mineral Waters in *Germany*, both hot and cold, and found no acid and truly vitriolic Salt in them, but rather one of an alkaline and neutral Kind, together with a subtile Earth, and fine Particles of Steel, I mixed Milk with these Waters, and that with such Success, as, in curing and alleviating many chronical Disorders, to find happy Effects, which could neither be obtained by Milk alone, nor by the Waters exhibited separately from Milk. Hence 'tis surprizing, and even to be lamented, that there formerly were, and still are, Numbers of Physicians, who, in a Phthisis and Exulcerations of the Lungs, think cold mineral Waters highly prejudicial; and dare neither prescribe them alone, nor in Conjunction with Milk. Before our Times, however, two celebrated Physicians recommended cold mineral Waters in Disorders of the Lungs. The most ancient of these is *Raymundus Joannes Fortis*, in *Cent. 2. Consil. 20, 27, 28, 30.* and especially in *Consil. 34.* where he speaks in the following manner: "At a proper Season of the Year, cold mineral Waters I have found to be highly useful in Ulcers of the Lungs; and to them I have ordered the Patients to have recourse, as the last and most effectual Expedient; since, if the Disorder did not yield to them, I could hardly think, that it could be removed by Decoctions, Milk, and other Things of a like Nature." And the celebrated *Morton*, a later Physician of the *English* Nation, in his *Phthisiologia*, recommends medicinal Waters in Disorders of the Lungs, and when they are afflicted with steatomatous Tumors, accompanied with a gentle hectic Heat, on which Occasion, he speaks in the following manner: "I have seen, during a Course of several Years, many Phthisical Patients have their Appetites and Strength restored, their Cough and hectic Heat lessened, their Respiration rendered freer, and, at last, their Disorder totally removed, without any Relapse, by means of these Waters."

But though I would not prescribe strong mineral Waters in Disorders which arise from a Solution of Continuity in the Lungs, especially if very considerable, yet I can from Experience affirm, that mild mineral Waters, abounding with an alkaline Salt, such as the *Selteran* and *Caroline* Springs, mix'd either with the Milk of Asses, or that of Goats, afford surprizing Relief, not only in a chronical and obstinate Cough, accompanied with an oppressive Pain of the Breast, a Difficulty of Breathing, a slow Hectic, and a Consumption, but, also, in a deep Suppuration of the Lungs, and a true Phthisis; for, by this Admixture of the mineral Waters, the Milk is rendered more efficacious and powerful in dissolving the tough and viscid Matter, removing the Obstructions of the capillary Vessels, and deterging and cleansing the Ulcers. But using this Mixture of Milk with medicinal Waters is still more indicated, when such Diseases of the Lungs are supported by hypochondriac, scorbutic, arthritic, or calculous Diseases, which frequently happens.

This Method of correcting Milk by various Admixtures was not only known, but, also, practised, by the antient Physicians. Hence, in *Hippocrates*, *Trallian*, *Aetius*, and *Aretaeus*, there are several Instances in which they prescribed Milk mixed with Water, for Phthisical Patients; or Hydromel, mixed with Milk; to which *Hippocrates*, in *Lib. 2. de Dieta*, ascribes a surprizing Efficacy, affirming, that it softens the Lungs, allays the Cough, procures an Expectoration of the Spit, and promotes a Discharge of the Urine. The celebrated *Sponius*, in *Aphorism. novis, Sect. 5. Aph. 99.* not only extols the external and vulnerary, and, also, the internal Use of Lime-water, in curing an Impetigo, and Leprosy; but, also, commends the Mixture of the same Water with Milk in the following manner: "Besides, says he, this Water, mixed with Milk or Whey, produces surprizing Effects in internal Ulcers, Diarrhoeas, and Dysenteries, as I was informed by Mr. *Desloire*, a celebrated practical Physician in *Gascony*." Nor shall I condemn this Method, since in Dysenteries, accompanied with an Exulceration of the Intestines, I have always found Milk, mixed with the *Selteran* Waters, an incomparable and highly efficacious Medicine.

But let us inquire with what other Remedies Milk may be commodiously joined: For curing, therefore, violent Disorders of the Lungs, in a true Phthisis, Infusions and Decoctions, prepared of vulnerary and pectoral Herbs, have not only been highly esteemed by Physicians, but, also, by the common People. The Herbs most recommended for this Purpose, are the greater Confound with its Roots, *Saracens* Confound, *Coltsfoot*,

sharp-pointed Plantain, spotted Lungwort, Sanicle, Spleenwort, Scabious, Paul's Betony, Agrimony, Ground-ivy, white Horehound, Yarrow with its Tops, St. John's-wort with its Flowers, Rose-flowers, and others of a like Nature, which are to be boil'd either in Ale or Water, adding Figs, Honey, and the Seeds of Fennel, and stellated Anise. Nor are there wanting Instances of considerable Benefit done to Phthisical Patients by these means; since when there is only a simple Abscess without a scirrhus Induration, or a polypose Concretion, they contribute much to the Consolidation of the affected Parts. It must, however, be own'd, that these Decoctions, in consequence of their astringent Quality, have produced very unhappy Effects; especially, when, in the Beginning of the Disorder, the Lungs are affected with hard Tubercles, or when they are unseasonably used to stop a Spitting of Blood; for by this means the extravasated Blood is easily coagulated, and the minute Vessels obstructed; so that there happens a far greater Stagnation of the Blood and Humours in the Lungs, a Circumstance which has the strongest Tendency to produce a Phthisis. But, in order to prevent these Dangers, such Infusions and Decoctions may properly be mixed with an equal Portion, or only half the Quantity, of Milk; by which their astringent Quality is, in some measure, destroy'd, and the Acrimony of the Humours corrected.

If the *Primæ Viæ* are to be cleansed of any Sordes, Senaleaves, Rhubarb, and Manna, may be commodiously infused, and gently boil'd either with Milk alone, Milk and Water, or Milk diluted with temperate mineral Waters; since, otherwise, Phthisical Patients, especially of delicate Habits, are easily injured even by mild Purgatives. I have, also, observed, especially when there was a large Quantity of acid Sordes in the *Primæ Viæ*, that a Dram or two of the Magnesia, which is nothing else but an highly subtile Flour of Quick-lime extricated, mixed with a few Ounces of Goats Milk, proved a safe and excellent Purgative.

In order to alleviate a violent Cough, which destroys the Strength and Sleep, to correct the Acrimony of the Humours, and relax the constricted Parts, the Antients, with great Success, used their various Diacodiums, the Principal of which are composed of the Juice and Seeds of the Poppy. But the Moderns, for the same Purposes, use the *Pilulæ de Cynoglossa*, and the *Pilulæ de Styraçe*, which, when exhibited in a small Dose, are sufficiently efficacious: But all these Medicines are rendered still more efficacious, if they are exhibited about Bed-time, in a Draught of Milk. It is, also, sometimes expedient, when there is a great Afflux of the Humours to the Breast, and when, in protracted and phthisical Coughs, a great Corruption is to be dreaded, to make moderate Use of such Remedies as provoke Urine, in order to derive the Impetus of the Humours from the Breast: For answering which Intention, we may use Milk and Whey, the diuretic Virtues of which are in some increased, by making them into an Infusion with Seeds of *Selleri*, *Parley*, *Cretan* *Daucus*, *Gromwell*, and *Violets*, well bruised together.

Besides those already mentioned, there are still other Remedies highly beneficial, not only for the Depuration, but, also, for the Consolidation, of those Ulcers of the Lungs, which constitute a Phthisis. The most considerable and celebrated of these are, the pectoral and vulnerary Balsams, of which, tho' there are various Kinds in the Shops, yet we shall only mention those invented by the most celebrated Physicians. The best, then, is the justly celebrated Balsam of *Meibomius*, prepared in the following manner:

Take of the old Oil of St. John's-wort, two Ounces; of Sperma-ceti, six Drams; of the best *Venice* Turpentine, three Drams; of Dragon's-blood, one Dram; and of Laudanum Opiatum, six Grains: Mix all together, and let the Dose be from one to two Drams.

Nor have I found the following Balsam less efficacious:

Take of the Oil of sweet Almonds, two Ounces; and of the Flowers of Sulphur sublim'd by Quick-lime, two Drams: Boil over a gentle Fire: Then add, of the Balsam of Capivi, one Dram; of Sperma-ceti, and Bees-wax, each half an Ounce; of the Extract of Saffron, half a Dram; and of the Oils of Anise, Fennel, and Mace, each ten Drops.

Another Balsam for answering the same End may be prepared thus:

Take of the best *Prussian* Honey, and Mountain Diacodium, each one Ounce; of the aqueous Essence of Myrrh, inspissated, half an Ounce; of the Flowers of Sulphur, and the

the Extract of the Tops of Yarrow, each two Drams; of the Extract of Saffron, half a Dram; and of the Oils of Mace and Sassafras-wood, each eight Drops.

These noble and efficacious Balsams, when their Use is indicated, cannot be exhibited in a better, or more proper Vehicle, than a sufficient Quantity of the Milk of Asles, Goats, or Cows.

Having considered the curative Method in a Phthisis, we now come to treat of the palliative, or mitigative Method, by which we endeavour to render Phthical Patients free from the most terrible and deplorable Symptoms, and to protract their Lives as long as possible. This Method is principally to be used in those Patients, in whom there is an intense Heat, gradually consuming the Flesh and Strength, which is generally excited by a Mixture of the purulent Matter with the Blood, and by which the Blood, being contaminated, is put into an Effervescence, and becomes more acrid and saline. In order, therefore, to extinguish this preternatural Heat, and correct the Acrimony of the Humours, nothing is more effectual than due Doses, either of Asles, or Womens Milk, exhibited in Conjunction with a proper Regimen. For answering the same Intention, Emulsions of the Four cold Seeds, and white Poppies, Decoctions of Barley, or Hartshorn, the Waters of Roses, Lilies of the Valley, and black Cherries, and Julap of Roses, may be frequently exhibited. The Virtue of these is greatly increased, if they are exhibited with the temperate nitrous Powders, which are of great Efficacy in a beginning Hectic. These Powders may be prepared in the following manner:

Take of Mother of Pearl, and Crabs-eyes, each two Drams; of purified Nitre, one Dram; and of the distilled Oil of Mace, four Drops: Mix all together, and exhibit one Dram for a Dose.

Nor, in order to allay the Violence of the Symptoms, are we to neglect Baths of sweet Water mixed with a sufficient Quantity of Cows Milk, and purified Nitre; by which means the constricted, tense, and dry Parts, are relaxed and moistened, the Cough allayed, the Heat lessen'd, and the Sleeps rendered more sweet and gentle; for which Reason such Baths are sometimes highly proper in the curative Method.

When the Lungs are affected with a callous and inveterate Ulcer, and a Spit, mixed with Pus, is daily expectorated, by which the Flesh and Strength are considerably impair'd, the principal Intention is, by correcting the acrid and saline Dyscrasy of the Blood and Humours, to prevent the farther Exulceration of the Lungs: This End is excellently answer'd by temperate Infusions of Ground-ivy, the Herb Costus, Chervil, Paul's Betony, Scabious, Coltsfoot, and Luhgwort. But such Infusions must be frequently, and for a long time, used. In serous Persons, and such as are subject to Catarrhs, when the Disorder is brought on, and supported, by a large Quantity of impure Humours falling on the Lungs, in order to prevent the greater Congestion of the Humours to the Breast, for ordinary Drink the Patient may use a Decoction of China-root, and of Red-saunders prepared with Raisins, a Drink highly recommended by Authors for this Purpose.

In such a Condition of the Patient, we are, as much as possible, to endeavour to preserve the Tone of the Lungs. This Intention is excellently answered by Sugar of Roses frequently exhibited in the foregoing Decoction. This simple Remedy was not only known and commended by the *Arabians*, and especially *Avicenna*, but, also, some of the Moderns think, that this alone is sufficient to mitigate, and even to remove, a Phthisis. See *Zacutus Lusitanus*, in *Prax. Admir. Lib. 1. Obs. 139.* and *M. N. C. Decad. 2. Ann. Obs. 19.* and *Sylvaticus*, in *Consil.*

We are now come to consider the preservative Method of Cure, which consists in preventing a Phthisis in those who are subject to it by Nature, Age, Habit, or Errors in Regimen, by a seasonable Removal of its Causes, or in removing it, or preventing its further Progress, by proper Medicines, when it is already present. We have already sufficiently shewn, that in sanguineous, choleric, and slender Habits of Body, from the Age of eighteen to thirty-four, a Phthisis, or purulent Spitting, accompanied with a violent Cough, and a Difficulty of Breathing, is not only generally produced by a Spitting of Blood, but, also, frequently recurs; in which Case, the principal Intention of the Physician ought to be, to remove this Spitting of Blood, or, at least, to mitigate it, as that it may not degenerate into a Phthisis.

In order, therefore, to remove a Spitting of Blood, besides the Efforts of Nature, there is no more late and efficacious Remedy, than Venesection, duly repeated, till the End is obtained. This is confirmed, not only by Experience, but, also, by the Authorities of the greatest Physicians. Thus the cele-

brated *Boerhaave*, in his *Praxis Medica*, informs us, "That, if we intend to cure a Person naturally disposed to a Phthisis, we are carefully to prevent his having a Spitting of Blood; otherwise we cannot cure him. Hence, about the seventeenth Year of his Age, Venesection is to be twice or thrice used; Gestations are, also, to be used; and in this Method we are to continue till the twenty-fifth Year of his Age. I know a Family, the Father, Mother, and all the Children of which, died Phthical, except one Son, whom I preserved by this Method, who is now above fifty Years of Age, has lived above the Time ascribed by *Hippocrates* for the Access of a Phthisis, and has no bad Symptoms attending him."

Besides Venesection, great Moderation, with respect to the Non-naturals, is to be used; for which Reason, 'tis necessary, that such Patients should carefully guard against violent Com-motions, both of Body and Mind, and abstain from spirituous Liquors, and every thing which is capable of throwing the Blood into an Orgasm. And, since a Spitting of Blood, preposterously treated with strong Astringents, easily degenerates into a Phthisis, such Medicines are to be as carefully abstained from, as if they were as much Poison. In such a Case, it is rather expedient to use Milk and Water for Drink; gentle Laxatives of Manna and Sena-leaves; Powders, which allay the Ebullition of the Blood, prepared of Shells, Mother of Pearl, Crabs-eyes, and Nitre; with each of these we may commodiously join the Decoctions or Infusions above-mentioned.

But there is nothing so effectual either for preventing a Phthisis, or removing it, when begun, as a due Regimen and Method of living; which, among the Antients, *Celsus*, in *Lib. 3. Cap. 22.* has elegantly prescribed in the following manner: "A Phthisis is, in the very Beginning, to be attacked by proper Remedies: If the Patient's Strength admits, a long Voyage is to be made, and a Change from a rare, to a more dense, Atmosphere is highly beneficial; for which Reason it is expedient, phthical Patients in *Italy* should sail to *Alexandria*. If any Circumstance forbids Sailing, the Patient is to be removed in a Bed, or some other manner. He must, also, abstain from Business, and every other thing which has a Tendency to discompose his Mind; he is, farther, to indulge himself in Sleep; Defluxions are to be carefully guarded against, lest, perhaps, being somewhat relieved, his Condition should again become worse. For this Reason Crudities, the Influence of the Sun, and the Access of Cold, are to be prevented. The Mouth and Fauces are to be covered, and the Cough removed by Medicines appropriated to that Purpose. In such a State Water is to be drank, and Milk may, also, be commodiously exhibited."

Celsus, in prescribing a dietetic Regimen proper for the Cure of a Phthisis, justly and principally recommends Exercise, and Choice of Air: Of almost the same Opinion is our justly celebrated *Sydenham*, who tells us, that he has prevented many Phthises, and cured many Phthical Patients, by prescribing Riding. He, also, thinks, that 'tis of no small Importance what Air they breathe: "For, says he, Phthical Patients are much more happily cured in the Country, than in the Town, since the Air of the former purges their Lungs, and contributes more to their Recovery, than any other Remedy." We are more effectually convinced of this, by considering by what Causes it principally happens, that in *Holland* and *England* so many die of a Phthisis; and that, in half of these, this Disorder is brought on by a Spitting of Blood. For, certainly, this is to be ascribed, not only to the gross Aliments, since these Nations use rich Food, eat much Flesh, and Sea-fish with high Sauces, by which is generated a crude Chyle and Blood, which, easily stagnating in the Lungs, dispose to a Phthisis; but this is rather principally to be ascribed to the Impurity of the Air, which is much impregnated with Smoke, by which the Bronchial Glands and Membranes, together with the minute Capillary Ramifications of the Pulmonary Artery, are dried; by which means a Consumption of the Lungs is, in Process of Time, brought on. The same Misfortune is, also, frequently produced by cold Weather, and Northerly Winds, which almost always prove offensive to the Lungs, especially of old Persons, and such as are disposed to a Phthisis; so that a considerable Number of Persons are destroy'd by this means. But nothing is more prejudicial, than exercising the Body strongly by Walking or Running against such a Wind; for by this means, I have frequently known Abscesses produced in the Lungs both of Men and Horses.

If any Disorder requires not only an accurate dietetic Regimen, but, also, a cautious and circumspect Use of Medicines, 'tis certainly a Phthisis, of which there is so great a Contra-indication of Remedies, that, unless they are all duly consider'd, the Physician may easily fall into an Error, and, instead of relieving, injure his Patient. Thus, in order to promote Expectoration,

pectoration, sweet and pinguious pectoral Syrups, incrassating Substances, and Preparations of Honey, are requisite; by the immoderate Use of which, however, we destroy not only the Tone of the Lungs, but, also, that of the Stomach; and by that means produce a larger Quantity of Crudities, and a greater Congestion of Humours in the Breast. The slow, drying, hectic Heat requires Diluents, moistening Liquors, and Milk; which, however, in a moist Cough, increase the Afflux of the Humours to the Breast. The sordid putrid Ulcers require balsamic resinous Medicines, such as Myrrh, *Peruian Turpentine*, Balsam of Capivi, *Peruvian Balsam*, and the other consolidating and vulnerary Balsams; which, however, by increasing the intestine Motion and Heat of the Fluids, generally produce bad Effects.

We find the same Difficulty in those uneasy, and almost convulsive Commotions of the Breast, which, in long and violent Coughs, are excited by the Acrimony of the Humours; for these require to be alleviated by Anodynes, Preparations of Poppies, oleous and somniferous Substances; which, however, when frequently exhibited, surprisingly destroy the Strength: The corroded, dissolved, and ulcerated vascular Substance of the Lungs requires consolidating and gently astringent Medicines; but since they retain in the Habit the extravasated Humours, which ought to be eliminated, and suppress Expectoration, they, by these means, increase the Corruption: Besides, if any one intends the Consolidation of Ulcers, he ought to prevent the Afflux of the Humours to the Part affected; which is obtain'd both by vulnerary Substances, and Decoctions of the Woods, and by Powders composed of *Armenian Boile*, Sealed Earth, and Blood-stone; but, when there are Tophi, Tubercles, and Indurations of the Lungs, these are enlarged by such Medicines. In order to extinguish the hectic Heat, nothing is more beneficial and efficacious, than the nitrous Powders: But even these do not at all times produce the desired Effect; since they readily prove purgative, and lessen the Sympathetic Force of the Stomach and Intestines. Milk is, also, of singular Efficacy in the Cure of these Disorders: Yet, in young and phlebotomic Habits of Body, where there is a beginning Phthisis, and many acid Crudities, accompanied with a slow Fever, I have often observed it highly prejudicial.

As Venesection is highly useful, not only for the Cure of a beginning Phthisis, but, also, for preventing it in young Persons, so it is very improper, with a curative Intention, when the Strength is greatly exhausted by the Disease, and the Heat; unless, perhaps, we should take away an Ounce, or an Ounce and an half, of Blood, for the sake of Ventilation. Draftic Purgatives, such as Preparations of Aloes, Scammony, and Hellebore, but more especially Emetics, are highly prejudicial, not only by impairing the Strength, but, also, by carrying off the temperate Moisture of the Body: Hence, when the Humours are to be derived from the Breast, and gently evacuated by Stool, these Ends are most commodiously obtain'd by Laxatives prepared of Manna, Tamarinds, Rhubarb, Agaric, and Sena-leaves: But if, when exhibited in a small Dose, these should not be sufficient for diminishing the Redundance of Humours, or if the gross and viscid Humours, which obstruct the minute Vessels, are to be resolved and eliminated, we may, instead of these, substitute the Pilule de Succino Cratonis, or Pills prepared of Gum Ammoniac, Saffron, Mercurius Dulcis, Extract of Rhubarb, and Aloes.

Motion and Exercise, and especially Riding, is highly commended for the Cure of a Phthisis and Hectic, by the most skillful Physicians, both ancient and modern. But in the Beginning of the Disorder, where the Patient is young, and the Habit plethoric, it often does more Harm than Good, by exciting a Spitting of Blood. Nor is it expedient, where the Lungs are violently injured, and a Vomica is suspected, since, by the brisk Motion of the Horse or Chariot, a fatal Inflammation may readily be brought on. But 'tis far otherwise in hypochondriac Consumptions, in which moderate and often repeated Exercise is highly beneficial.

The more temperate, pure, and serene the Air is, the more beneficial it is to Phthical Patients; for a moist Intemperature of the Atmosphere is surprisingly injurious to the Lungs, which are already relaxed, tumid, and infarcted. 'Tis, also, highly expedient, to impregnate the Air surrounding the Patient, with the balsamic Particles arising from Fumigations of Mastic and Amber; or to render the Air drawn in balsamic, by holding a Piece of the best Myrrh in the Mouth, till it is dissolved by the Saliva.

Since the Beginning of a Phthical Exulceration is frequently produced by a saline Catarrh, or a certain acrid caustic Matter, convey'd, by Translocation, from other Parts to the Lungs, in order to derive this Afflux elsewhere, and evacuate the Humours, we may safely and advantageously use the actual Caustery; by the Application of which, between the Scapulae, and

in the Neck, we read of an imminent Phthisis happily removed, in *Riverius*, in *Obs. Cent. 2. Obs. 67. 78. Cent. Obs. 92.* and in *Schenkius*, *Obs. 56.*

In order the more effectually to institute the Cure of a Phthisis by Milk, either alone, or mixed with mineral Waters, the following Cautions are to be observed:

1. We ought diligently to inquire, whether the Strength of the Stomach is sufficient to digest, and again expel, this Species of Medicine.

2. 'Tis expedient, that, before the Use of the Milk, the Primæ Viæ should be well cleansed from viscid and acid Humours; which Intention is most effectually answer'd by a laxative Infusion of Manna, whose Virtue is augmented by the Addition of a sufficient Quantity of Tartar.

3. On the first Days, it is expedient, every Morning about six or seven, and every Afternoon about five o'Clock, to drink six or eight Ounces of Womens, or Asses Milk, and afterwards gradually to increase the Quantity.

4. After the Patient has for six or eight Days drank the Milk in this manner, a gently laxative Medicine, and such as has a Tendency to evacuate the Lodes, is to be interposed, and repeated every sixth Day.

5. He ought never to use Wine, nor Malt-liquors, for Drink, but rather Ptisans of Barley, Hartshorn, and Citron-peel. He must, also, carefully abstain from Aliments of hard Digestion, and such as generate bad Juices. On the contrary, Broths prepared of Tortoises, Cray-fish, Veal, Fowls, Lettuce, and Garden Succory, are of singular Service.

6. In order to augment the concoctive Force of the Stomach, which in a Phthisis is very languid, 'tis expedient, between Meals, to exhibit some balsamic, pectoral, and stomachic Elixir, such as that made of the best Myrrh, Saffron, Nutmegs, Orange-peel, Marsh-trefoil, and Liquorice-root.

In those excessive and colliquative Sweats, which, in phthical and hectic Disorders, exhaust the Strength, besides Whey and Emulsions, the Species de Hyacintho, mixed with a small Quantity of Nitre, and half a Grain of Laudanum Opiatum for a Dose, afford singular Relief. But, if, in consequence of the Violence of the Cough, by which the Mass of Blood and Humours is greatly exagitated, an excessive Profusion of Sweat should be produced, a gentle and corrected Opiate, such as the Pilule de Sty race, or the Pilule Wildegansii, may be commodiously exhibited with some tempering Powder, since, by removing the Cough, it checks and lessens the Sweats. But, it, besides the Cough, a colliquative Heat of the Blood should, also, prove the Cause of the Sweat, *Morton* and *Pitcairn* are not afraid to prescribe the *Peruvian Bark*, with one Grain of Laudanum Opiatum. *Hoffman*.

If an Ulcer has so corroded the Substance of the Lungs, that the whole Habit of the Body is by that means wasted and consumed, the Patient is said to labour under a Pulmonary Phthisis, or Consumption of the Lungs.

The Origin of such an Ulcer may be deduced from any Cause capable of so stopping and detaining the Blood in the Lungs, that it must necessarily degenerate into a purulent Matter.

These Causes may be reduced,

1. To that very Habit and Temperament of Body, in consequence of which, the Patients first begin to spit Blood, and are afterwards affected with an Erosion and Exulceration of the Lungs. This Habit or Temperament of Body consists, first, in the Tenderness of the arterial Vessels, and the Impulse of the Blood, when in any Degree acrimonious. Such a Constitution is known by the Sight of the small and tender Vessels, and of the whole Body; by the Length of the Neck; a flat and narrow Thorax; depressed Scapulae; an highly red, thin, dissolved, acid, and hot Blood; a very white, and sometimes a rosy blooming Complexion; a bright and shining Skin, Chearfulness of Temper, and an early Ripeness and Subtlety of Genius. Secondly, in such a Weakness of the Viscera, as to occasion those Aliments, which are in their own Nature too tenacious to create Obstructions, Putrefactions, and Acrimony; and in consequence of these unhappy Circumstances, to exulcerate the corroded Vessels after a previous Spitting of Blood. This Weakness of the Vessels is known by a slight Fever, a dry and gentle Cough, a preternatural Heat, an increased Redness of the Lips, Fauces, and Cheeks, appearing about the time the new Chyle enters the Mass of Blood; by a Propensity to Sweat, during Sleep; by a Weakness and great Difficulty of Breathing upon the smallest Motion. Thirdly, it appears at that Age, when the Vessels, having acquired their full Growth, resist the farther Efforts of the Fluids to lengthen them, whilst the Blood, in the mean time, is increased in Quantity, Acrimony, and Impetus; so that it appears between the sixteenth and thirty-sixth Year of the Patient's Age, and earlier in Girls than in Boys; because the former sooner arrive

at their full Growth, than the latter. Fourthly, in an hereditary Disposition to the Disorder: What is said under the Article FIBRA, compared with the Circumstances just now mentioned, are sufficient to explain, ascertain, and prognosticate the Nature, Causes, and Effects of Blood-spitting. Now, this Effect, or a Spitting of Blood, is brought on, and accelerated;

1. By an Interception of the usual Evacuations; especially of Blood, such as the Hæmorrhoids, Menfes, or Lochia; a Suppression of Hæmorrhages of the Nose; and Neglect of usual Venesection, especially in plethoric Habits, and those who have lost any of their Limbs.

2. By any great Violence or Force apply'd to the Lungs in Coughing, Crying, Singing, Running, violent Efforts of the Body, Anger, or any Wound inflicted, by whatever Cause or Instrument.

3. By acrid, saline, or aromatic Aliments; by Drink of the like Qualities; by a particular Manner of living, or by any other Disease, which have a Tendency to increase the Quantity, Acrimony, Velocity, Rarefaction, and Heat of the Blood. Hence it is, that this Symptom happens so frequently after acute Fevers, the Plague, the Small-pox, and Scurvy.

Hence it arises accompanied with a slight Pain, a moderate Heat, a Difficulty of Breathing, and an Oppression of the Thorax. The Blood discharged from the Lungs is generally florid, scarlet-coloured, and frothy, full of small Fibres, Membranes, arterial, venous, or bronchial Vessels; a Cough, a Noise, or Rattling of the Lungs, a soft, small, and undulating Pulse, a Difficulty of Breathing, and a saltish Taste in the Mouth, having preceded.

It is cured, first, by liberal Venesection, repeated every third Day, for four times, till the inflammatory Crust entirely disappears. Secondly, by refrigerating, inspissating, styptic, and lenient Medicines, long persisted in, and sometimes intermixed with very mild Balsamics. Thirdly, by managing the six Non-naturals in such a manner, as that they may be contrary to the Causes of the Disorder already enumerated; and especially by a moderate Regimen, and mild Aliments, continually persisted in, to which a Milk-diet peculiarly belongs. And, fourthly, by correcting the specific Nature of the Cause, or particular Disease, which has produced it.

When a Spitting of Blood has happen'd, and is removed, the Patient is to have Blood taken from him every six Months for some succeeding Years; but the Quantity is to be gradually lessen'd each time, that at last the Practice may be left off, without any Detriment.

But, if, in consequence of the Violence of the Disorder, the preposterous Use of Styptics, or a Neglect of the Method of Cure already prescribed, there should, after the Spitting of Blood, arise a continually increasing Difficulty of Breathing, a wandering Horror, an Heat and Redness of the Cheeks, a dry and gentle Cough, a slight hectic Fever, a preternatural Thirst, a Weakness and Sense of Weight in the Thorax; these Symptoms import, that the Wound from which the Blood was expectorated, has already begun to change the Matter collected about its Lips, and under the Crust of dried Blood, into Pus; and this Collection is degenerating into a conceal'd Vomica, which, breaking, terminates in an open Ulcer of the Lungs.

This Collection of Matter, besides the Causes already mentioned, also, arises from any Peripneumony terminating in an Apostem; which may be known from the Signs specified under the Article PERIPNEUMONIA.

Besides, an Empyema may corrode, waste, and consume the Lungs; in which Case, the same Disease is produced with that occasioned by an Ulcer primarily formed in their Substance. This is known to be the Case by the Signs specified under the Article EMPYEMA.

Hence 'tis obvious, what Signs discover an Ulcer of the Lungs, even of the conceal'd Kind; how many Causes and Sorts there are of such Ulcers; and consequently, how many different Kinds of Phthises, or Consumptions, there may be.

Now the Effects of an Ulcer of the Lungs already formed, but concealed, and commonly called a *Vomica*, are generally these following: The Acrimony, Quantity, and Putrefaction of the Pus, are daily increased; the Membrane containing it is dilated, corroded, and macerated; the Blood-vessels, and those of the Bronchia, are converted into Pus; the whole Substance of the Lungs, or at least, of one of their Lobes, is converted into a purulent Matter; the Patient is afflicted with a continual dry Cough, or such an one as, only by the Concussion in Coughing, produces an Abrasion and Expectoration of the Spit; the Blood convey'd into the Ulcer, is converted into Pus; the Vomica in the Lungs spreads, and is propagated; then it breaks at last into the Ducts of the Larynx. Sometimes there is a suffocating Secretion, and sometimes a daily and copious Expectoration, accompanied with a Cough of a Pus, which subsides in Water, is of a thick Consistence, sweet, pinguious, fetid, white, red, yellow, livid, cineritious, full of Strigments, and which, when put upon a live Coal,

smells like stale roasted Flesh. Then the Vomica breaks into the Cavity of the Thorax. Hence the Respiration becomes highly difficult, and the Symptoms of an Empyema appear. Then the Respiration is most difficult; the whole Blood and Chyle are converted into Pus; the Preparation of the nutritive Juice is totally destroy'd; the Solids are almost totally consumed; there is an hectic Fever, accompanied with a small and languid Pulse; an intense Heat of the superior Parts; an Hippocratic Face, and a Redness of the Cheeks. There is an unaccountable Uneasiness, especially towards the Evening, a preternatural Thirst, profuse Sweats in the Night, red Pustules on the Face, Neck, and Breast, cedematous Swellings of the Hands and Feet, great Weakness, Hoarseness of the Voice, a Falling of the Hairs, an Itching all over the Body, accompanied with watery Pustules, a Gripping, a frequent and weakening Diarrhœa, the Stools discharged in which are yellow, fetid, purulent, and cadaverous; a Suppression of the Spit; and at last, Death.

Hence we may draw the following Rules:

1. An hereditary Phthisis is the worst of all, and not to be cured, but by preventing a Spitting of Blood.

2. A Phthisis, arising from a Spitting of Blood, produced by external Causes, without any previous inward Defect, is, of all others, the mildest, if all other Circumstances are alike.

3. A Phthisis, in which the Vomica is suddenly broken, and the expectorated Pus white, well concocted, smooth, and in Quantity corresponding to the Largeness of the Ulcer, without Thirst, but with a good Appetite, due Digestion, laudable Secretion and Excretion, is curable, though with Difficulty.

4. A Phthisis, produced by an Empyema, is incurable: And,

5. A Phthisis, accompanied with an Expectoration of heavy, solid, fetid, sweet Spit, together with the Symptoms last enumerated, is to be despaired of.

When a Vomica is already formed in the Lungs, the Intention of the Physician ought to be, to maturate and break it with all Expedition; which is done by a Milk-diet, Riding on Horseback, tepid Steams, and expectorating Medicines: And, when it is broken, it is requisite,

1. To guard and defend the Blood against the purulent Contagion.

2. As soon as possible, to evacuate the Pus from the Ulcer, and to cleanse and consolidate its Lips. And,

3. To use such Aliments as are of easy Digestion, that they may not only pass through, but, also, be changed and duly assimilated by the remaining Force of the Lungs. They ought, nevertheless, to be capable of nourishing the Body, and unfit for generating new Pus.

The first of these Intentions is answer'd by mild and grateful acid and saline Medicines, vulnerary Herbs, and mild Balsamics exhibited in all Forms, in large Doses, and long persisted in.

The second Intention is answered by liquid and diuretic Medicines; together with such as promote Coughing, whether internal or external; by Exercise, Riding, and the Country Air, which expel the Pus; by Abstersgents, and Balsamics, both internal and external, which depurate; and, lastly, by consolidatory Paregorics. And,

The third Intention is answer'd by Ptisans, Broths, and a Milk-diet.

The palliative Cure of a Phthisis principally regards the Cough, the Oppressions, and the Flux: And

These Symptoms are remov'd by a proper Regimen, Opiates cautiously exhibited, and proper warm Liquors.

As a Phthisis is most generally produced by an Ulcer of the Lungs, so it may sometimes arise from an Ulcer of some of the other Viscera, such as the Liver, Spleen, Pancreas, Mesentery, Kidneys, Uterus, and Bladder; the Knowledge, Prognostics, Effects, total and palliative Cures of which may easily be deduced from what has been said, by the Physician who knows the natural Effects of each particular Bowel. *Boerhaav. Institut.*

The following Observations of Dr. Bennet, relative to the Subject of this Article, are of Importance sufficient to deserve Notice.

Omitting all Consideration of that Moisture, which, when it superabounds in the Stomach, by the Assistance of the Oesophagus, and the Membrane common to that and the Tongue, flows into the Mouth without Coughing or Hawking; as, also, that Rheum which issues out of the capillary Arteries, and their Coats, from the Brain upon the Palate, and ejected with the same Ease, the Nature of that Expectoration is to be examined, which proves injurious to the Breast. This is nothing else than a Portion of Fluid derived from the Blood by Suffusion into the Cavity of the Thorax through the pectoral Arteries, and thrown up through the Trachea into the Mouth, in order to its final Ejection, by the contractile Motion of the Lungs, either

in Coughing or Hauking. As the Blood, therefore, is constituted in Conformity to its Aliment, so the Matter of this Excretion is as the Blood, from which it is derived. The Truth of this will appear, upon considering the Manner of this Excretion, and the Largeness of its Quantity, in those who are not troubled with a Defluxion from the Brain upon the Trachea.

Whoever shall use proper Medicines for purifying the Blood, although Pectorals be omitted, yet the Matter expectorated will become better, in proportion to the Rectification of the Mass of Blood. Thus, when the State and Colour of the Matter is bad, if such Sweats be promoted, as serve to clear the Blood from its Impurities, the Matter brought up will mend, in Conformity to the Blood's Depuration.

That the Pulmonary Artery, with its Ramifications, receives the Recrements of the Blood, and thence detaches them into the Branches of the Windpipe, is a matter beyond all Dispute: Some are more, and some less, affected with this Lodgment, according to its Nature and Quantity; and sooner or later discharge it by Expectoration; according to the Circumstances of its Adhesion. Every body has not the same Freedom in the Organs of Breathing: Some are fatigued with a severe Cough without any Expectoration; whilst others, with a slight Hauking or Coughing, discharge the irritating Matter. Some have it so much diluted with *Ichor* or *Serum*, that the Lungs endeavour in vain to bring it up; others have the Defluxion so hardened into Clots, that it yields with great Difficulty. Some, through a cold Laxity of the Breast, can evacuate but little Matter; while others, of a firmer and warmer Constitution in the same Parts, discharge it with little Uneasiness. Some, by the Freedom of the Motion of the Lungs, when they do not adhere to the adjacent Parts, easily expel the Matter, while others, either through Plenitude or Constriction, natural or adventitious, have such a Dislodgment either retarded, or rendered impacticable.

In Expectoration, the Matter that settles about the upper Parts of the Trachea, is evacuated with little Labour of Hawking and Coughing; but what is deeply situated is with great Difficulty expelled.

Matter of a moderate Consistence is easily expectorated; but when it is too thin, or formed into hard Clots, it is not dislodged without great Trouble and Difficulty.

Nature then carefully consults her own Security, when the Matter, in Phthisical Patients of a more healthy Constitution, is supplied from the Blood, and when the Times of Formation and Expulsion are determined. For, when crude, it cannot be naturally or spontaneously discharged; but it is prepared for Evacuation, when it comes to Maturity, and is, as it were, shaped to the Capacity of the Vessels, through which it is to pass. Those who are accustomed to this sort of Expectoration, are under the salutary Directions of Nature, to which the Means are to be accommodated; but if the Matter be interrupted in its Course, so that it does not proceed according to the Inclinations of Nature, it occasions a Necessity for more vigorous Efforts. The Treatment, therefore, of such Patients is a Matter of great Importance.

Whoever attempts to hasten Expectoration by violent Exercise, or any voluntary Anticipations of Hawkings, extremely fatigues the Contents of the Thorax; when Nature at her appointed Time would easily have relieved them. Those who expectorate the Rheum freely and copiously, will soon find themselves eased of the Burden upon the Lungs. On the contrary, at the Beginning of a Cough, every thing is difficult and fatiguing; but in its Progress, as the Matter ripens, every thing becomes easier.

In my Opinion, the white frothy Spit is produced by a thin sort of Rheum, ouled out into the Lungs or Fauces, and there agitated. For a Defluxion, proceeding from a Coldness of the Brain, is thicker, and, unless it be retained and agitated some time in the Mouth, is not so white, is more mucous, and froths not up so much into Bubbles; whence it seldom or never hurts the Lungs; but, if it froths, I believe it proceeds from some Motion of the Parts, from Heat, and a Mixture of Air. Besides, if this Matter rises unmixed, it indicates no more, than that there is some internal Exsudation, occasioned by a more vigorous Action of the Parts than usual.

A frothy Spittle is increased by Exercise, in those especially who perspire but little; and that the Motion of the Mouth and Lungs conduces to it, is manifest, because it always happens to those who cough or talk much.

This Spittle is very light, consisting principally of a watery Pellicle inflated with Air.

Nature has given the same Laws to Plants, and to Animals; and, according to *Hippocrates*, implanted in both what is sour, bitter, sweet, salt, and of all Tastes. Nor does the Microcosm want its insipid Fluids, a moderate Proportion of which

is necessary to dilute the Blood; but, if a Superfluity be contained in the Vessels, it loads the Constitution, as does that which is extravasated, if it collects upon particular Parts, especially the Organs of Respiration. But at present it is of no great Importance, whether such insipid Humidities collect in their proper Vessels, or are thrown upon them after the Discharge of their proper Offices, so that they have been circulated with the Blood, and are found inspissated upon Protrusion into the large Cavities of the Body. The Excretions, however, which consist of a mild Humour, are more troublesome than dangerous; but those which do not readily pass into the Trachea, in a liquid Consistence, harden into a thick viscid Consistence, and are expectorated with great Difficulty.

A Lady of forty-seven Years of Age, fleshy, but valetudinary, who had all the Capillaries in the Liver, Spleen, and Mesentery, obstructed, was frequently affected with unequal Shiverings, attended with a Coldness, in one or other of the Parts, which seemed to her to resemble the pouring on of cold Water; which Symptoms, notwithstanding our Endeavours, continued; but when a Ptyalism, or Diarrhoea, arose, it then ceased. At last, after the Exhibition of some Cathartics, by sweating in dry Baths, and a sparing dry Diet, she was quite cured.

In many Persons, a thin Lymph arising from the Blood is at first copiously discharged upon the Trachea, upon which the Coldness will disappear; but the Spit will then grow thick, pellucid, and be evacuated with violent Reaching. With this Matter we have often observed the Breast to be extremely obstructed.

Pleuritic Patients, after the purulent Matter has been expectorated, cast up Spit of this kind for some Days; and the more the other Vessels are affected with it, the less will the Organs of Respiration be obstructed by it; and not at all, when it is translated upon the Bowels. I am of Opinion, that this Mucus, being unequally supplied from the Blood, serves in the place of Nourishment to those who have the Rickets; and I take it for granted, that the same, stagnating in the Ureters, and hindering the Passage of Urine, regurgitates into the Stomach and Bowels, and occasions Pains of the Back, Vomiting, Gripes, and a bastard Ischury. It is sometimes to be observed, that the like Viscosity hinders the Circulation of the Blood, by lodging in the greater Vessels. An Instance of this I once met with in a Child, who was taken off in the third Fit, it having obstructed the Pulmonary Artery, or that which is called the Arteria Venosa. Lastly, if these thick Rheums are unequally deposited upon some of the extreme Parts, they generate oedematous Swellings; but if upon the whole Habit, an universal Oedema or a *Leucophlegmatia*, and an *Anasarca*, very difficult to be cured.

This Mucosity, which is the Cause of obstinate Obstructions in the Bowels, increases in the Female Sex, or in Men of a cold Temperature; and even in a State of Recovery, where the natural Heat is defective, or is wasted, and grown languid, by the long Continuance of any Disease.

OF YELLOW-COLOURED SPIT.

Yellow Spit is probably derived from the bilious Juice, the Blood being so weakened before Secretion, that it is, at least, deprived of its Taste. Salts make Ulcers by Erosion, so putrefying Bodies by penetrating, inciting, and raising the Parts into a Tumor; but I have always been of Opinion, that saline Serosities prepare the way for Putrefaction, by too much relaxing and softening the Parts; but both together make an internal compound Ulcer, which cannot be cured without great Difficulty. It is not surprising, that a Fluid, otherwise thin, clear, and agreeable, while it flows in the Blood-vessels, should be changed into a yellow Colour; for, as the Blood, at its Source, and before it is distributed into its proper Vessels, is destitute of Tincture and Consistence, so the Spit, which is its Recrement, is changed by the Alteration of Heat in the Parts thro' which it passes, and retains no distinguishing Quality that it possessed, whilst it was carried about in the Circulation. It is still less surprising, that yellow Spit should lose its Taste, when it has not only been blended with the whole Mass of Blood, but strained, also, thro' the fleshy Substances of the Parts, and the Pores of the Membranes; for that Substance in which its Bitterness consists, may not be able to penetrate through such fine Strainers.

The whole Mass of Blood is impregnated with Bile, or bitter Particles, which serve to preserve it. However, no Part of that, or of any other Fluid of the Body, is so affected with Bitterness, as to communicate, by the Tongue and Palate, any considerable Sensation to the Nerves, except that Part secreted from the common Mass, which is of a remarkable bitter Taste, and is discharged in extreme Vomings, when it is drained from its natural and appointed Receptacle.

In Phlebotomy, when the Blood happens to fall upon the Skin, it commonly feels hot; and yet the Heat of this Blood, whilst

whilst in the Vessels, might, as far as could be conjectured, be moderate and benign.

Once, in a dissected Subject, I saw the Neck of the Gall-bladder filled with Tophi; but the Bladder itself was filled with a pellucid Lymph, strained through those Tophi, as through a Filtre of a thick Contexture. These Tophi resembled candied Coriander-seeds; but the Lymph was insipid, and coagulated upon the Fire into a Mucilage like the White of an Egg.

These yellow Excretions are not produced, except by a continued Incalescence of the Blood, or by an Heat concentrated by Cold, or from a Corruption or Redundance; which different Causes may be known by Physicians from the Nature of the Complaints of the Patient.

That some Portion of this yellow Humour penetrates through the Skin under the Arm-pits in sweating, appears from the Linen.

The consistent fleshy Substance of none of the Viscera could give the Blood its red Colour, without the Assistance of a proper Heat; but the Spit owes its Substance, and Variations of Colour, to the Blood, and Juices, of the Viscera, and also, to the Aliments. The most remarkable Sorts of Spit, that frequently occur, are the bluish, the rust-coloured, and blackish; which, are not, as many imagine, produced by what is drawn in with the Breath, either by the Nostrils or Mouth; but from a Taint lodged in the Viscera and Vessels, and formed, perhaps, in the Spleen, its principal and peculiar Laboratory: This Taint, being received into the Blood, is expelled in the Course of Circulation. But I do not imagine, that it receives its deep Colour immediately, as it is discharged from the Vessels; but as it must distil from the suscipient Viscera and Vessels, where it condenses, there it is endowed with its dark Tincture. However the Degrees of Heat, in themselves, are not the effectual Cause of the different Colours; yet, where they increase or diminish, the Spit is more or less coloured. But for these Diversities which I have enumerated, an Heat more gentle, but of longer Continuance, is requisite.

Expose to the intense Heat of the Sun, or of a culinary Fire, a Portion of bluish Spit, and it will immediately change to a white Colour; which would not happen, if the bluish Colour proceeded from any Mixture of extraneous Particles, drawn in with the Breath. This bluish kind of Spit has, I believe, never been observed to be of a thin Consistence, but always mucilaginous.

This Species of Expectoration is increased by exhibiting things that cool the Breast, as Barley and Apples; but is lessened by the Use of sudorific or mercurial Medicines. Those, also, spit but little, whose natural Heat has been much exhausted by long Sickness; those who are accustomed to slender Diets, Exercise, and Fasting; those who have the Breast of an hot Temperature, or who are much used to Smoking; and those who are agitated with frequent Coughing. Whence it appears, that the Matter of this sort of Expectoration is formed by a more gentle Heat, and longer Concoction, and by a Breast of a cold flaccid Temperature.

I remember an Instance of this kind, in a middle-aged Woman, under a violent Catarrh, whose Spleen so filled the Head with noxious Vapours, that every Morning she discharged a vast Quantity of a Rust-coloured Spit, which resembled the Threads of a Cobweb; a Portion of which was sometimes diverted, by the hot Catarrh, into the upper Part of the Aspera Arteria; but, upon opening and detarging the Vessels of the Spleen, both the Catarrh and Excretion ceased.

If the White of an Egg be long, though gently, kept warm, it will change its white into a bluish Colour.

At the End of a Fit of accidental Coughing, from Congestion, or of a thick periodical Expectoration, I have observed this sort of Spit to rise more white and depurated; and I have observed, that such Kinds generally proceed from Disorders of the Spleen or Womb; nor does the Mucus of the Nose become discoloured from any other Cause.

Though a salt Spit is produced by a salt Blood, and may give some Commotion to the Humours, yet I imagine, that it seldom bursts the Membranes and Coats of the Vessels by its incisive Quality; but, after the Blood has strained out its saline Serum, like a Dew, through the Membranes and Coats of the Breast, it occasions a Cough, by stimulating the contractive Motion of the Lungs. By this sudden Concussion and Contraction, the tender Parts, through which the saline Particles of the Blood are conveyed, being rendered weaker, are soon corroded. So that the saline Particle, lodged upon any of the Viscera, does not immediately, like a Needle, penetrate the Part itself; but, by remaining long upon it, it dissolves its Texture, and assimilates it to its own Nature; so that this Effect rather proceeds from a Power of Solution, than of Incision; for, by insinuating into the very Substance of the Part, it is mixed and united with its most intimate Combinations, and so changes its Substance into a kind of middle State between Mixture and Dissolution: When it has continued in this neutral State some time, it, at last, dissolves, and is, by an Induc'd

Friability, entirely destroyed. Thus, if a saline Fluid be extravasated, perhaps, like a Vapour, and deposited upon a particular Part, by its penetrating Acrimony, it intimately unites with the Substance of the Part, and endangers its Corrosion and Dissolution. And if the acid and saline Particles should even be deposited on the extreme Parts, great Trouble and Danger are occasioned to the Patient.

Many whose pectoral Vessels have been burst by a turgescient Blood, perhaps of a saline Nature, have been cured by using Phlebotomy once or twice; but I have known none whose Lungs have been corroded, that could be recovered without an entire Edulcoration and Change of the Mass of Blood.

Some have been affected with Luxations of the Vertebrae, by an acrid Defluxion upon the Spine; and I have, also, seen the Joints of other Bones distorted by the same Means. But if the Qualities of the Fluxion are entirely offensive to Nature, as in the Venereal Disease, Protuberances will be raised on the Bones, especially the Tibia; and they will be entirely render'd friable, spongy, and soft. The same Case happens in the Elephantiasis. And, if we may believe some, the Bones are so dissolved, as to become flexible, like Wax.

I have seen many almost entirely emaciated, whose whole Mass of Blood abounded with Salt; and who used, periodically, to expectorate a briny Matter, discharged into the Breast from the pulmonary Veins, which, however, has not corroded the Lungs. Among these, I knew a Merchant of London almost reduced to a Skeleton, in whom the saline Matter was translated from the Lungs into the Palms of the Hands, Feet, and Ancles, where it produced most malignant consuming Ulcers, whilst the Lungs continued entire.

I have, more than once, seen the constituent Substance of the Lungs so uniformly dissolved, that they seem'd reduced into a kind of purrid Mud.

I have, also, met with Patients, whose Lungs have been torn away in pieces, by a sharp and unequal Corrosion; and appear'd, upon Dissection, as if they had been gnaw'd by a Rat. A redundant Acrimony of the Blood, which is frequent in melancholic Habits, not only occasions a general Tenderness, but exposes the Parts to suffer by external Injuries, and destroys the Nourishment of the muscular Flesh. And the Rheumatism, which is nearly related to the Gout, both in its Causes and Seat, produce very intense Pains.

The constituent Matter of all Spit is different, and assumes various Appearances, according to the Part from which it derives its Source; for the Serum of the Blood is not the only Matter which is translated into the Cavity of the Thorax, but, sometimes, that dewy Substance, which is destined for Adhesion and Nourishment, rises into the Mouth. The Blood is first deprived of its thin Serum, and thereby becomes heated; and the Increase of this Heat throws its more glutinous Parts upon the Lungs, which have been already relax'd and weaken'd by the Translation of watery Humours; and Patients, in this Situation, are, I think, in the greatest Danger. For Nature greedily embraces this Juice, till her attractive and assimilating Qualities are entirely lost.

When I practised at Bristol, where Consumptions are very frequent, I met with some who easily expectorated a sweet Spit for three Months together, and were totally wasted and enervated: Some of these were seized with a violent Cough; and, having entirely lost their vital Moisture, they expired, pale, dry, and entirely emaciated. In one Instance of this Kind, who, for our Information, was open'd, and who, sometimes, expectorated Blood after the saline Excretions of Spit, the Lungs had entirely lost their Tone; and yet the other Organs of Respiration, and all the Viscera, were found to Appearance. Nor is this surprising to those who know how unfit Blood, that is too much attenuated, is for Nutrition; or who have observed too much, colliquated and rarefied by intense Heat, flow through the capillary Arteries, particularly of the Nose, and produce Fainting. For it is inevitable Destruction to the animal Oeconomy to deprive it of that tempering glutinous Juice, which, by a moderate Warmth, gives a due Smoothness and Consistence to the whole Mass.

This sweet Spit, in all the Patients that I remember to have seen, happens after a tedious and generally saline Pyralism.

This Spit, put upon the Fire, becomes of the Consistence of a white Gelly, like other nutritious Juices.

Of all sorts of Spit, the most vapid and feculent is of a cineritious dirty Colour, like moist Clay, which is, also, the least adhesive, that is excreted by consumptive Persons, and is a Symptom of the Defect of natural Heat, and of the Approach of Death. All the other Sorts are, in some measure, affected by Warmth, and from it derive their Figures and Consistences; this only stagnating in its Lodgments, can scarcely be expectorated unless forced up by the Greatness of its Quantity; it is produc'd by extreme Corruption, and natural Decay.

If you fill two Acorn Cups, of equal Bigness and Weight, one with the dirty Spit, and the other with any other Species, the dirty Spit will weigh down the other, as it is heavier than any of the other Sorts.

This

P H T

This Clay-like Spit happens only to those who are hastening to their latter End, and are out of all Hopes: Their Lungs, upon Dissection, have been found only a Mass of stinking Corruption. *Benner. Theat. Tabid.*

OBSERVATIONS RELATING TO THE DIAGNOSTIC SIGNS.

The Approach of this Distemper may be discovered, when the saline Blood is carried towards the Breast with a slower or quicker Motion.

Its slower Afflux is discernible;

1. By bloody and saline Spittings, at stated Periods, about four, five, or six, in the Morning, or Afternoon, sooner or later, and more or less, according to the Irritations they occasion, or as they are determined by the Exercise of the Body. That which is inspissated out of the Vessels, is not excreted at the accustomed Periods, because they abound in the Body at those Times, as is the common Opinion of Physicians; but because, in some measure, it transpires through the Skin, while the thicker Parts are deriv'd to the larger Vessels.

2. By more frequent Spitting and Hacking.

3. By an Interception of the cutaneous and other Excretions.

4. By Spit of a light unequal Substance.

5. By globular Spit convolved like Hail-stones, and expel'd at the above-mention'd Hours, by sudden Coughing or Hacking.

6. The Truth of these Symptoms is confirmed, when, from any Cause, there happens a Defluxion of a saline Matter upon the Joints or Extremities of the Body, and the Breath in that time gets Strength.

More violent and copious Affluxes are known,

1. By a more plentiful Expectoration of frothy Blood of a Clay-colour, with Hacking and Coughing, less painful, if from the Lungs; but of a blackish or reddish Colour, if from the Cavity of the Thorax; if from the great Arteries, it is attended with regurgitating Repletions of the Mouth at Intervals; but gradually, and with a Sense of Titillation, if from the Fibres.

2. By an heavy Pain in the Breast, which is periodically pungent.

3. By a periodical Difficulty of Breathing.

4. By a manifest Relief of the other Parts.

The Signs of a Phthisis from a thick and cold Phlegm, falling from the Head, and collecting in the Breast, is apparent, when the like Matter being secreted, in some manner, at the Extremities of the Carotid Arteries, and contaminated by a cold Brain, makes its Way into the Aspera Arteria, which is always accompanied with the Discharge of a similar Matter into the Thorax from the common Vessels; of which a distinguishing Symptom is an Erection or Opening of the Larynx, with its alternate Closure, or falling again, and causing a Sound like the Ticking of a Watch beating Seconds, to which daily are joined the following Symptoms.

1. A Torpor of the Spirits.

2. An Heaviness of the Head, with Pain, increasing periodically at the full Moon.

3. Longer Sleeps, with Dreams of Drowning.

4. A general Coldness of Temperature.

5. The Pores contracted with Cold.

6. A Flaccidity of the Lungs, and all the pectoral Muscles, and a slow Expectoration, which is known by a frequent Endeavour to hawk up something in vain.

7. A thicker Spit, which is easily evacuated after a good Meal, when the Breast has been warmed with suitable Food.

8. An heavy and oppressive Pain of the Breast.

9. A Cough which, at Intervals, threatens Suffocation, and is aggravated by Exercise, and drinking cold Liquors.

10. A frequent Difficulty of breathing.

11. A Catarrh slowly, but continually, moistening the Aspera Arteria.

12. Difficult Expectoration in a cold Air, but a Readiness to sweat.

13. The Flesh becomes flaccid and soft in a moist State of the Air, and hardens in dry Weather; which is a Symptom that almost always attends a consumptive Patient. Whence,

14. A Disposition to be affected with every Inclemency of Air or Wind; the moist, or cold, being most injurious.

The Signs of a Phthisical Consumption, from what Source never derived, but deeply rooted, and eluding all the Art of Medicine, with regard to a perfect Cure, are,

1. A severe Cough, the Violence of which streaks the Spit with Blood; then a nasty Pus of a cineritious Colour, which, put into Water, easily mixes with it, and falls to the Bottom; there are, also, expectorated Fragments torn off from the Lungs themselves, the Vessels, and Membranes.

2. A ferid Breath, and the greatest Difficulty in Respiration.

3. A Pain of the Breast, and a pricking Soreness of the Nipples; especially in the time of Coughing.

4. A Defect in all the Functions.

P H T

5. A putrid Fever from the Blood, universally tainted by the Pus, and inducing preternatural Motions, as Fermentation; Whence the Fluids of the Body are discharged by colliquative Sweats, especially in the Morning.

6. A Diarrhoea, and at last, a Lientery, occasioned by a weak State of the Liver, and all the Parts subservient to Nutrition.

These are necessarily attended with,

7. A Driness of the Flesh, from the Defect of a due Degree of Moisture.

8. A Scurf upon the Extremities, and whole Epidermis, from the same Cause.

9. A Pain accompanied with Tension, in lying down on the Right or Left Side, occasion'd by the Adhesion of the Lungs to one Side or other of the Pleura.

10. A weak, small, and frequent Pulse, from a languid Motion of the Blood to the extreme Parts.

11. A shedding of the Hair, and the Nails dead-coloured and hooked.

To which, lastly, may be added,

The *Facies Hippocratica*, or the very Image of Death; the Face ghastly, the Eyes sunk, the Nose pinch'd, the Cheeks hollow, the Temples collapsed, and the whole Body stiff, and resembling a Skeleton.

A Fluxion, of whatever kind, from the whole Body into the Breast, is more dangerous than one from any particular Part.

A Fluxion from a Stagnation of the Blood, or a Diminution of its Motion near the Heart, is more dangerous than one proceeding from a more distant Part.

There is less Danger from Blood gushing by fits into the Breast, than when it flows slowly and constantly; for though there is a greater Flux upon a periodical Bleeding, there is a time of Refection.

Extravasation of Blood from Redundance and Tension is much more easily cured, than one proceeding from its Distemperature and Acrimony.

There is greater Danger to the Lungs from the Pressure occasioned by an Obstruction in the Liver, than from a Regurgitation by the broken Vessels.

If a Spitting be critical, and from Translation, it often goes off with Safety and Advantage.

Those who have had the Pulmonary Vessels continually enlarged, by the Afflux of Blood, and Expressions of viscid Matter, accompanied with an Asthma admitting of no Remissions, have mostly, either, by a Rupture of the Lungs, thrown up Blood into the *Trachea*, mixed with fordid Matter; or have died with a sudden Aggravation of the Asthma.

In all Fluxions, if, upon the Use of Remedies, the Intervals are lengthened, and Paroxysms remitted, it promises Recovery, and *vice versa*.

A larger Intermission, between milder Fits, is still more encouraging.

Phthisical Patients bear long, and easily, the Afflux and Expectoration of mild watery Humours; but of bilious Excretions, with Difficulty, and for a short time; but by a Discharge of thick, saline, ferid Matter, they are immediately destroyed.

From a Suffusion there is the greatest Danger, but from an Instillation the least.

Those who are crooked, and have had Limbs cut off, are most subject to Fluxions, and in greatest Danger from a Phthisis.

After the Spitting of Blood has ceased, if the Lungs are less sensible, or the torpid State of the Parts prevents a total Discharge, the Putrefaction of the retained Blood, and of the Lungs themselves, will endanger a Phthisis.

A free Respiration, a Cessation of Coughing, and a Continuance of Strength, after Bleeding, are good Symptoms, and *vice versa*.

If after Blood-spitting, a mucilaginous, blue, and light Spit succeeds, and if it continues, it foretels a Return of the *Hæmoptysis* in young and hot Constitutions; but, if purulent, a Phthisis, both to Young and Old; if none at all, and other Circumstances be favourable also, it denotes Recovery.

Spitters of Blood are most uneasy in Snow, Hail, or Rain.

The Bronchia are least obstructed by an extravasated Blood; that putrefies; by a nutritious Juice, when it becomes mucilaginous, more; and mostly by Phlegm falling down the *Trachea*, if it be concocted into a tough Viscidity.

Lastly, if the Organs of Respiration retain Matter, of any Kind, long upon them, it forebodes a difficult Cure.

That Languor which slowly steals upon consumptive People, without any Decay of the Lungs, or other Bowels, is most dangerous to *English* Constitutions; and, unless Remedies immediately take Place, which they seldom do, is mortal.

A Phthisis which sinks a Person suddenly, when attended with Coldness of the Extremities, especially of the Feet, is most dangerous, although it does not so severely affect the Lungs; for it is a Symptom, that the nutritious Juice is very much vitiated, and the Strength exhausted.

Phthisical

P H Y

Phthifical Patients are in a most desperate State, who have stony and ossaceous Concretions of unequal Surfaces lodged upon their Lungs.

In those who are accustomed to Intemperance, if they are seized with a Phthisis productive of Languor, they are in the last Extremity of Danger.

A copious and frequent Flux of Matter upon a corroded Part is dangerous; for internal Ulcers are seldom cured when they emit a plentiful Discharge of Sanies, as those externally are hardly ever healed.

Persons of lax Habits, though they sooner droop and languish, yet they soonest feel the Benefit of Medicines, if they be timely applied at the Beginning of the Disease.

Those who are phthifically inclined, and frequently spit insipid Matter, are longer in wasting, although from the Beginning the Lungs were affected.

Those who labour under an hereditary Phthisis, though they are incurable, yet their Life may be of some Continuance.

The Lives of Phthifical Patients are prolong'd by frequent, but moderate, Hæmorrhages at the Nose.

The Danger of an Effusion of Blood from the Pulmonary Artery is lessened, when it is attended with an Hæmorrhage from the Nose.

If, after a protracted Phthisis, there appears a chylous Flux, it is a fatal Symptom.

If an Ephemera, or Hætic, often returns at unequal Periods, it indicates dismal Consequences.

When Phthifical Patients have a keen Appetite, and acquire no Strength from their Food, their Case is desperate; for it shews, that the vital Juice is degenerated to a corrosive Fluid.

When Virgins, who are pretty far advanced, but never had the menstrual Flux, are affected with a Phthisis from a Translocation of the menstrual Matter to the Breast, it produces a most dismal Alteration, and a sudden Wasting, which are followed by Death.

If a Contraction of the Nostrils, a Straitness and Sinking in of the Breast, happen suddenly, they prognosticate immediate Death.

Oedematous Swellings of the Feet, in a Phthisis of long Duration, is a mortal Symptom.

Almost all Phthifical Patients perish, who are seized with a putrid or malignant Fever, occasioned by the Taint of the Matter lodged in the Breast.

When a freer Respiration is obtained by the Assistance of Remedies, and a Change of Air, then the Patient feels himself enlivened, his Strength is increas'd, and his Colour becomes florid; lastly, Health returns, and the vital Heat is rekindled all over the Body.

When, in Phthifical Patients, a copious Discharge of slimy and saline Sordes is procured by Cathartics, the Breast is greatly relieved, and there appear Hopes of a Recovery.

If Pectorals of a thin Substance, which stimulate, are exhibited in a long-continued Phthisis, without exciting a Cough, the Sign is fatal.

If, by the Assistance of Art, the Spit, which was variegated, be brought to one Colour; if from nasty it becomes depurated; if, from having an unequal Surface, it becomes smooth; from saline, insipid; from fetid, inodorous; and lastly, if it be easily expectorated; all these are Signs of Recovery. *Bennet Theat. Tabid.*

PTHOL, *φθόν*. The same as PHTHISIS.

PTHOLIS, *φθόλις*. A Pastil, or Troche.

PTHORA, *φθορά*. Corruption. In *Hippocrates*, it imports a Miscarriage.

PTHORIAS. An Epithet of a Medicine producing Abortion.

PTHOROPOEOS, *φθοροποιός*. Deleterious, or destructive.

PHU. A Name for several Species of *Valeriana*. It generally imports the Garden *Valerian*.

PHUSCA, *φύσκα*. The same as *Posca*. There are several compound *Poscas* describ'd by *Aetius*, *Tetrabib. 1. Serm. 3. C. 80, 81.* and by *Paulus Aegineta*, *L. 7. C. 11.*

PHYCIS, *Phycida*, *Fuca*, a Sea-fish resembling the Sea Perch, with a long sharp Snout, thick Head, large Teeth, and his Body covered with Scales. It is of several Species and Colours, and is taken among the Sea-weeds near the Shore, in the Sand and Mud, where it brings forth its Young; it is good to eat, and easy of Digestion; purifies the Blood, and provokes Urine. *Lewery des Drogues.*

PHYGETHLON, *φύγεθλον*, is a broad, but not much elevated Tumor, in which there is some Resemblance of a Pustule. The Pain and Distention with which it is attended, are violent, and greater than in proportion to the Bigness of the Tumor; and sometimes there is a small Fever. This Tumor is slow in ripening, and is not much converted into Pus; it generally rises in the Neck, in the Armpits, and in the Groins. Our Countrymen call it *Pannus*, from some Similitude in its Figure [spoken with relation to *Panis*, a Loaf of Bread]. *Celsus*, *Lib. 5. Cap. 28.*

In the Account above given, *Celsus* describes a bilious Tumor, agreeably to what *Galen* says of it, *Lib. 2. ad Glauc.* "An in-

P H Y

flammatory Erysipelas, or an erysipelatous Inflammation, is called a *Phygethlon*." The same Author, in other Places, reckons this Tumor among Inflammations and Affections of the Glands; and distinguishes it from other Tumors by its Heat, and speedy Generation; and says it arises in the Armpits, and in the Groins, from an Inflammation of the indurated Glands in those Parts. *Foefius.*

PHYTICA. A Name for the ALATERNUS.

PHYLLIREA. The same as PHILLYREA.

PHYLLITIS. A Name for several Sorts of LINGUA CERVINA.

PHYLLON. A Name for the *Mercurialis*; *fruticosa*; *incana*; *testiculata*.

PHYMA, *φύμα*, from *φύμασι*, to grow, or be generated from, in its general Signification, comprehends all Kinds of preternatural Tumors, in whatever Part of the Body they appear; and especially such as affect the external Parts, and Superficies of the Skin, and arise without an external Cause, and are generated, increased, inflamed, and suppurated, in a short Period of Time. *Galen*, *Com. in 6 Epid.* Agreeably to this Description, those Eruptions of Tubercles, which are generated of vicious Juices, and excited by an heated Blood, are called *Phymata*, *2 Aph. 15. 3 Aph. 20.* and *Lib. de Alim. Phymata*, *φύματα*, are, also, Inflammations of the Glands, which suddenly break forth, and hasten to a Suppuration, *Gal. Lib. 2. ad Glauc. & Paulus, Lib. 3. Cap. 22.* and are reckoned among Affections and Inflammations of the Glands, *Lib. de Tum. præternat.* differing from a *Furunculus* only in Hardness. In *Proorrh. 2.* we also we meet with *τὰ χοιρώδεια φύματα*, "scrophulous Tumors," incident to Children. *Φύμα* sometimes signifies an Abscess, or vitiated Juices lodged in some Part of the Body; as *4 Aph. 44, 45. & 7 Aph. 65. & Coac. 118.* So *Celsus*, *Lib. 2. Cap. 7.* renders *φύματα*, from *4 Aph. 44.* by *Abscessus*. *Φύμα*, also, takes the Signification of *εμπύημα*, and every Inflammation which is converted into Pus, as *7 Aph. 8.* according to *Galen's* Comment on the Place. So we read of *φύματα εμπύα*, *Proorrh. 2.* And, *Coac. 404.* we read of *Phymata* in the Lungs discharging Pus, which are opposed to hard and undigested *Phymata*. *Celsus* renders *φύματα*, sometimes, *orientia Tubercula*, and sometimes *Tubercula*, as in *Lib. 5. Cap. 18. & 28.* *Seneca de Beneficiis* renders *φύμα* by *Tuber*, where he relates, that a Person had a *Tuber* opened by the Sword of a Tyrant, who aimed to take his Life. *Pliny*, relating the same Story, calls it *Vomica*.

PHYMATA, in *Celsus*, *Lib. 2. C. 8.* seems to imply a Caruncle in the Urethra.

PHYMOSIS. The same as PHIMOSIS; or as PHYMA: *Blancard.*

PHYMUS. The same as PHYMA. *Blancard.*

PHYPELLA. The same as PANUS.

PHYRAMA, *φύραμα*, from *φύρω*, to mix, is a Species of Ammoniacum, so called from its being mixed with Earth, Sand, and Gravel. *Goræus.* See AMMONIACUM. But it signifies any Mass whatever, moistened with a Fluid, and worked.

PHYSA, PHYSE, *φύσα*, *φύση*, signifies a Flatus, or gross Wind in the Body, or the fetid Wind discharged by the Anus, according to *Erotian*, from several Places in the Aphorisms, and from *1 Epid.* where we read of *φύσαι σιγώδεις* (*Physæ sigodæes*) and *φύσαι ψοφώδεις* (*psophodæes*) Flatulences discharged with and without Noise; the Word bears the same Sense in the *Prognost.* and *Coac.* *Φύσα*, also, is very often used by *Hippocrates*, to signify a gross Wind, or Flatulence, collected in any Cavity of the Body. Thus, *Lib. περί παθόν*, he says, that Meats, light of Digestion, generate no Flatulences (*φύσαι*); and, *Lib. de Flatibus*, it is said, *πνιύματα δὲ τὰ μὲν ἐν τοῖσι σώμασι φύσαι καλῶνται, τὰ δὲ ἔξω τῶ σώματος αἰετ.* "The Winds which are in Bodies, are called *Physæ*; those without the Body, Air."

PHYSALIS. The Hop, or rather its Flowers, which are boiled in Beer. It is, also, a Name for the ALKEKENGI. *Blancard.*

PHYSALOS. The Toad. *Blancard.*

PHYSEMA, *φύσημα*. The same as PHYSA. It, also, signifies the Resin of the Fir.

PHYSESIS. The same as PHYSA; that is, an Inflation.

PHYSICA REMEDIA are Remedies which do Service without any manifest Reason.

PHYSINX, *φύσιγξ*, is a little Bladder; but *σχορόδον φύσιγξ*, in *Hippocrates*, *Lib. de Fistulis*, is the Stalk or Stem of Garlick, which he uses instead of a Probe for searching the Depth of a Fistula. *Galen*, in his Exegesis, where we read *φύσιγξα* (*Physigra*) corruptly for *φύσιγχα* (*Physingha*), as, also, in *Varinus*, makes the *Physinx* to be what we call the Stalk, and especially its Cavity. The Scholiast of *Aristophanes* makes the *Physinx* to be the outer Rind of Garlick; and so does *Erotian*, on *Hippocrates*, contrary to *Galen*, tho' with relation to the same Place. *Hesychius* makes the *Physinx* a Species of Garlick, or an Head of Garlick: Whence some, by *Physinx*, in *Hippocrates*, understand an Head or Clove of Garlick, and expound it by a Probe with a Button at the End of it, in the Figure of a Clove of Garlick; but *Hippocrates*, in that Place, directs the Use of a fresh Stalk of Garlick in the Search of a Fistula. Some, for *φύσιγχα*, in the *Exegesis*, read *φύσιγχα*, (*Physeta*) others *φύσιγχα* (*Physitra*).

P I C

PHYSIOGNOMIA, φυσιογνωμία. The Art of judging of a Person's Nature, Fortune, or Disorders, by the Lineaments of his Face; from φύσις, Nature, and γινώσκω, to know.

PHYSIOLOGIA, φυσιολογία, from φύσις, Nature, and λέγω, to treat of Physiology. That Branch of Medicine, which considers Nature, with respect to the Cure of Diseases, particularly the human Body, its Parts, Structure, Health, Life, Functions, and Oeconomy.

PHYSOCELE, from φύσα, a Flatus; and κύλη, a Tumor. A Wind-rupture.

PHYSTE, φύση. A Mass of Meal macerated, in a Vessel, in Wine, but not worked.

PHYTALIA, φυταλία. The latter Part of the Winter. But it, also, signifies, a Place where Vines are planted.

PHYTEUMA. A Name for the *Reseda*; minor; vulgaris.

PHYTOLACCA.

The Characters are;

The Flower is rosaceous, polypetalous, and disposed in Bunches; the Berry is soft, globular, and full of Seeds disposed in orbicular Order.

Boerhaave mentions two Species of *Phytolacca*; which are,

1. *Phytolacca*; Americana; majori fructu. *Tourn. Inst.* 299. *Boerb. Ind. A.* 2. 70. *Phytolacca*. Offic. *Solanum racemosum Americanum*. Raii Hist. 1. 662. *Solanum magnum Virginianum rubrum*. Park. Theat. 347. *Solanum racemosum Indicum*. Hort. Reg. Par. 167. **PORK-PHYSIC**.

It was brought from *Virginia* and *New England*, and is cultivated with us in Gardens. The Leaves are used in Medicine, and esteemed an excellent Anodyne. *Dale*.

2. *Phytolacca*; Americana; fructu minori. *T.* 299. *Solanum Barbadesse, racemosum, minus, tinctorium, Circeæ foliis mollibus & incanis*. Plukn. Alm. 353. *Phytogr. T.* 112. Fig. 2. *M. H.* 3. 522. *Boerb. Ind. alt. Plant. Vol.* 2.

This Kind of Plant is called *Phytolacca*, from φυτὸν (*Phyton*), a Plant; and *Lacca*, because it gives a red Colour like *Lacca*. The Virtues are yet unknown. *Hist. Plant. adscript.* *Boerb.*

PHYTOLOGIA, φυτολογία, from φυτὸν, a Plant, and λέγω, to treat of. That Part of Pharmacy which treats of Plants.

PHYXIMOS, φύξιμος. An Epithet of Diseases in *Hippocrates*, importing salutary, or of which a Person is likely to recover.

PIA MATER. The thin Membrane which immediately involves the Brain. See **CAPUT**.

PIANTERIA, πιαντήρια. Aliments which increase Fatness, and Corpulence.

PIATTONES. Crab-lice.

PICA. Offic. *Schrod.* 5. 323. *Schw. A.* 333. *Mer. Pin.* 172. *Charlt. Exer.* 75. *Pica varia cordata*. Will. *Ornith.* 87. Raii *Ornith.* 127. *Ejusd. Synop. A.* 41. *Aldrov. Ornith.* 1. 784. *Gesn. de Avib.* 628. *Jonst. de Avib.* 27. **THE MAGPYE**, or **PIANET**.

This Bird is very much commended against Dimness, Redness, and Pains of the Eyes, being eaten, or incinerated, and the Ashes put into the Eyes, or any other way apply'd; the Ashes are, also, exhibited in the Mania, Epilepsy, and Melancholy. *Dale*.

PICA GLANDANA, or *Glandaria*, is another Species of Magpye, supposed to be the *Pica Græca*; to which the same Virtues are ascribed, as to the preceding.

PICA is, also, the Name of a Dissemper, in *Greek*, κίτλα, (*Citta*) being a depraved Appetite principally incident to Women with Child, to the End of the second or third Month of their Pregnancy. They who are affected, have absurd Longings after sour, sharp, or acrimonious Things, and sometimes after Earth, Shells, Coals, old Rags, rotten Pieces of Leather, and other things abhorrent to Nature. Men are sometimes molested with the like vitiated Appetite, which is supposed to proceed from a Collection of depraved Humours in the Stomach.

The Disease is called *Pica*, either from the Variety of absurd Longings, which bears Analogy to the Variety of Feathers observed in the *Pica*, or *Pye*, or because, perhaps, that Bird is subject to the same Disorder. The Scholiast of *Aristophanes* gives another Reason; for he says, the *Pye* is a Bird of a voracious and universal Appetite, and difficult to be pleased; that he longs after Fruits, but is soon disgusted; and, when he has eaten of this or that kind of Apple or Berry, he is presently satiated with it, and flies from Tree to Tree in Search of new Varieties: So that Women are properly said to be affected with the *Pica*, when they long for this and that kind of Food, and, when they have tasted it, conceive an Aversion to it; which Kind of Loathing is called ἀ-μικσία, *Amisicoria*. But however κίτλα may signify the Bird *Pica*, as well as a Disease, we have no Authority for affixing that double Signification to the Word *Pica*; for none ever called a Disease, in proper *Latin*, *Pica*. *Pliny*, therefore, always calls this Disorder *Malacia Gravidarum*, in *Greek* μαλακία, from μαλακός (*Malacos*), soft, languid. It is defined, like the κίτλα, or *Pica*, to be a languishing Disorder incident to pregnant Women, in which they long sometimes for one thing, sometimes for another; some desire to eat Earth, dead Coals, or Terra Cimolia, as *Paulus* says, *Lib.* 1. *Malacia* is, also, a Disorder or Weakness of the Stomach; in which Sense it is used by *Pliny*, *Lib.* 28. *Cap.* 7. *Lib.* 23. *Cap.* 6. μαλακία (*Malacia*) are expounded in *Galen's Exegetis*, aqua-

P I C

tile Animals having no Spine, as the Polypus, Loligo, Sepia, and Urtica; these have neither Blood nor Viscera; and, *Lib.* 3. *de Alim. Fac.* he describes them as having no Scales, nor rough or testaceous Skin, but soft like the human. *Pliny*, *Lib.* 9. *Cap.* 18. calls them *Mollia*, by a literal Translation of the *Greek*, and gives the same Description of them. The Place in *Hippocrates*, to which *Galen*, in his Exegetis, had a respect, since we can only conjecture, in this Case, appears to me, says *Foesius*, without all doubt, to be that, *Lib.* περί γυναικ. φύσ. where we read, καὶ σιτίοισι μαλακοῖσι, καὶ τοῖσι πολύποσι, καὶ τοῖσιν ἄλλοις μαλακοῖσιν, "with soft Foods, as Polypuses, and other soft (aquatile Animals)."

The *Pica*, according to *Riverius*, in *Lib.* 9. *Cap.* 3. *Prax. Med.* is such a Depravation of the Appetite, as excites the Patients to an uncommon and preternatural Fondness for absurd, useless, and hurtful Aliments.

This Disorder is produced by depraved and corrupted Juices, either generated in the Stomach, in consequence of an undue Concoction, or convey'd to it from other Parts.

Humours of this Kind are, for the most part, generated in Persons of phlegmatic and melancholic Habits, and especially in Women, to whom this Disorder seems, in a manner, peculiar, tho' Children and Men are sometimes, tho' very rarely, afflicted with it. Humours of this Kind are principally generated by the Use of bad Aliments; a Suppression of some natural Evacuation, and especially of the Menses, Grief, Disorders, Obstructions, and Weakness of the Liver and Spleen, and various Diseases of the Uterus.

These corrupted Humours are of various Natures and Qualities, according to the various Degrees of their Corruption and Intemperature. Hence arise various Inclinations to various, absurd, and improper Aliments; for since some of these Humours are crude and unconcocted, and others of an hot and inflammatory Quality, so some are fond of acid, austere, bitter, and highly-cold Substances, such as unripe Fruits, Vinegar, Verjuice, the Juices of Oranges, Pomegranates, and Lemons, cold Water, Snow, and Ice; whilst others cover earthy, dry, and hot Substances, such as Cloves, Cinnamon, Nutmegs, and other Aromatics, Salt, Ashes, and Plaster.

This Disorder is familiar to young Women labouring under a Chlorosis, and to pregnant Women, on account of the Suppression of the Menses; which, by remaining long in the Body, assume a peccant Quality; and being convey'd to the superior Parts, load the Stomach with that corrupted Humour which depraves its Actions, and perverts the Appetite. Sometimes Children, especially those born of Mothers labouring under a Chlorosis, are subject to this Disorder. Nor are Men totally exempted from this Misfortune, tho' they are but rarely afflicted with it, and those Men are most subject to it, who are of a melancholic Habit, labour under Obstructions, or a Suppression of the hæmorrhoidal Discharge.

The Diagnostic of this Disorder is sufficiently easy; for by the bare Relation of the Patient, 'tis certain, that the Part principally affected is the Mouth of the Stomach, which may be said to be the Seat of Appetite. The Cause may, also, be conjectur'd at from their being fond of Substances of a similar Nature with the peccant Humours in the Stomach; for if they are fond of Coals, Salt, and other Things of a like Nature, we may conclude, that saline and hot Humours produce the Disorder. But this Conjecture will be converted into Certainty, if any Quantity of these Humours is thrown up by Vomit, or discharged by Stool; or if acid, or nidorous Eructations are present, or a bitter acid, or saline Taste perceived in the Mouth.

As for the Prognostic of this Disorder; it is of the chronical Kind, but not very dangerous; since, in Process of Time, the peccant Humour is removed by frequent Vomits, or other proper Medicines, and the Menses, or hæmorrhoidal Discharge, a Suppression of which, laid the Foundation of the Disorder, are at last restored. But if these are neglected till Nature is too much weakened, terrible Disorders may succeed; for when the first Concoction is vitiated, the second and third must necessarily be so too. Hence violent Obstructions, Cachexies, and Dropsies happen. Or if the Quantity of the peccant Humour, lodged in the Stomach, is very great, or its Quality highly malignant, it sometimes produces terrible Cardialgias, which terminate in Deliquium, Syncope, and sometimes in Death.

If Women, labouring under this Disorder, begin to abstain from the improper and absurd things they were fond of, and with less Reluctance use laudable and wholesome Aliments, it is an infallible Sign of a beginning Cure, and approaching Health.

Pregnant Women are generally freed from the *Malacia* about the fourth Month, because the Fœtus, becoming at that time larger, consumes a greater Quantity of the Humours, and the Mother, by frequent Vomiting, throws up the Sordes lodged in her Stomach. But if the Disorder continues any longer, it is dangerous; for 'tis a Sign, that the peccant Humours are deeply rooted, and cannot be eliminated without Difficulty.

'Tis better that Persons, labouring under this Disorder, should be fond of acid and sharp-tasted Substances, than of such as are directly unfriendly to Nature, as *Avicenna* informs us, in *Fen.* 13. *Lib.* 2. *Tract.* 2. *Cap.* 20. for a Fondness for the latter indicates a greater

greater Recess from a natural State, not to be cured without great Difficulty.

The Cure of this Disorder is to be varied according to the different Constitutions of the Patients.

In pregnant Women, very few Medicines are recommended as proper, for fear of Abortion. However, even in these, gentle Medicines may be used for evacuating and corroborating the Stomach. Nor is moderate Venesection, frequently repeated, to be neglected, if there is a Necessity for it, since it is of great Efficacy in the Cure of this Disorder.

In young Women labouring under a Chlorosis, this Disorder is cured by the same Medicines which are proper for removing the Chlorosis.

As the Pica in Men, which, however, rarely happens, proceeds from Obstructions of the Liver and Spleen, it must of course be removed by every thing which removes these Obstructions.

According to Doctor *Pitcairni*, in his *Element. Med. Lib. 2. Cap. 18.* in this Disorder, such Things as abound Acids, are to be prescribed; fixed Salts; mucilaginous, oleous, and pinguious Substances; the Effects of all which are to hinder the free Contact of the Coats of the Stomach with each other. For answering this Intention, he himself orders viscid Substances, and such as remain long in the Stomach.

Thus, for Aliments, he prescribes Gellies of Hartshorn, Broths of gelatinous Fleshes, and other things of a like Nature.

For Drink, he orders *Spanish* and *Canary* Wines, moderately drank; and especially *Brunswick* Mum, or *Dutch* Hydromel, prepared of one Part of Honey, and six Parts of Water.

PICACISMUS. The same as PICATIO.

PICANS. An Epithet for Wine, importing, that it is of a sweet delicious Flavour.

PICATIO. Pication. A Species of *Dropax*. For this Purpose, dry Pitch is melted with a very small Quantity of Oil, and applied to the Skin whilst warm. This Preparation adheres strongly to the Parts previously shav'd, and is to be pull'd off, before 'tis perfectly cold. Then it is to be warm'd at the Fire, applied in the same manner, and pull'd off, before 'tis entirely cold. This Method is to be repeated very often. This *Picatio*, or *Dropax*, is highly beneficial to Patients afflicted with continual Vomings, Crudities of the Stomach, Indigestion, and the Coeliac Passion. It is, also, properly applied to Parts not duly nourished by the Aliments. When 'tis requisite this common *Dropax* should be heating, we add to it Pepper, Pellitory of *Spain*, Rosemary-seeds, and Bitumen: When we want it of a drying Quality, we add to it native Sulphur, Salt, and the Ashes of Vine-twigs. If we intend it should be of a stimulating Nature, we add *Limeæstis*, commonly call'd *Ardate*, or Euphorbium. All these Ingredients, when triturated, are to be sprinkled into the melted Pitch and Oil. *Actius, Tetr. 1. Sermon. 3. Cap. 180.*

PICATIO, also, implies the same as PICA.

PICATUM VINUM. See PISSITES.

PICEA. See ABIES.

PICERION, *πικέριον*. Butter. *Hippocrates, Galen.*

PICINUM OLEUM. The same as PISSELAEM.

PICOTA. A Distemper, consisting of an Eruption of very minute red Pustules. *Castellus.*

PICRIS. A Name for the *Cichoreum Sylvestre*, five *Officinarium*.

PICHROCHOLOS, *πικρόχολος*, from *πικρός*, bitter; and *χολή*, Bile. A Person abounding with bitter Bile. *Hippocrates.* Sometimes it signifies a Person very subject to Anger.

PICTONUM COLICA, or COLICA PICTONIA, or PICTAVIENSIS. The Name of a nervous Colic, generally called, in the West-Indies, the dry Belly-ach. This is so popular a Disease in the *Leeward* Islands, that it may, very justly, be reckon'd an Endemic in them, most People there, at one time or other, having felt its Cruelty.

There is not, in the whole Compass of Infirmities, to which Flesh is liable, any one that afflicts human Nature in a more exquisite Degree, than this unmerciful Torture. The Belly is seized with an intolerable piercing Pain, sometimes in one Point only, and sometimes in several Parts of the Intestines. In a short time, the Affliction becomes more diffusive, and stretches itself from the Point where it was first felt, to a greater Distance; which is done in such a manner, that the Fibres of the Bowels seem to be contracted, and drawn up from the Anus, and the Pylorus, towards the Part primarily affected, as into the Centre of Misery: During this Scene of the Distemper, which sometimes lasts eight, ten, or fourteen Days, the Patient is upon a perpetual Rack, with scarce any Remission from Pain. He undergoes all the various Modifications of Torment; and the burning, lancinating, and biting Pain, by turns afflict him with a Diversity of grievous Sentations. The Belly continues, all this time, obstinately constive; very little Urine is made; the Strength is greatly impair'd; the Habit exceedingly wasted; the extreme Parts are cold; and the Patient frequently falls into clammy Sweats and Deliquia. The Affections of the Mind are much disorder'd; Grief, Anger, Rage, and Despair, usurp the Place of Reason; the vital, natural, and animal Functions, are perverted; and the miserable Patient, at length sinks under the Agony of his Affliction.

The principal Causes concurring to the Production of this Colic are, immature, austere, and astringent Fruits, eaten in too great Quantities; debauching in strong Punch, highly acidulated with the Juice of Lime; and travelling in the Night, after too free Iningurgitation of spirituous Liquors.

When the Extremity of the Pain begins to abate, the sick Person often observes a sort of tingling Uneasiness through the spinal Marrow; which propagates itself from thence to the Nerves of the Arms and Legs, which, at this time, are very weak and debilitated. This Weakness and Inability increases daily; till, in a short time, it terminates in a confirm'd Palsy of the Extremities. The sudden Transition from the Colic to a Palsy made Dr. *Willis* conjecture, that the Nerves of the Mesentery were principally affected in this Disease.

In order to subdue this dire Distemper, and prevent the paralytic Consequences of it, we must employ our utmost Endeavours to remove the Constipation of the Bowels, and solicit them to a Discharge. But this is not, upon any account, to be attempted by strong stimulating Cathartics, which, by their forcible and repeated Irritations, would vellicate and contract the Fibres of the Guts, enrage the Pain, create convulsive Motions of the Bowels, hasten on the Palsy, or change the Disease into a *Misere Mei*. The mild, lenitive, detergent Purges are, therefore, to be relied on in this Exigency, and they ought to be given in liquid Forms, small Quantities, moderately warm, and frequently repeated, till they slide through the Intestines, and procure a Stool.

But it is almost impossible, that this should be effected, so long as the Bowels continue under such spasmodical Disorders as they are now in: We must, therefore, have a due Regard to the mitigating this Inconveniency. There is not any Preparation of Opium so effectual in this Case, as the *Pil. Matthæi*, which receives a prodigious Advantage from the aperient Quality of the *Sapo Tartareus*.

It has been a received Opinion, that Opiates, in this Distemper, have often proved the Occasion of the paralytic Consequences which have ensued; but I am fully convinced from undoubted Experience, that this Observation is erroneous, having always found the desired Success from the Administration of them, tho' given with a liberal Hand. However, it may not be improper, in these Cases, to add three or four Grains of Castor to each Dose of the *Pil. Matthæi*.

The Method by which I have relieved many in this dreadful Distemper, is as follows. As soon as I came to the Patient, I order'd eight or ten Grains of the *Pil. Matthæi* to be given him; and, about half an Hour after, half an Ounce of Manna, two Drams of Cream of Tartar, and one Ounce of solutive Syrup of Roses, in warm Water-gruel; and this is to be repeated every three Hours, allowing four Grains of *Pil. Matthæi* to be administered in the Intervals. But if the great Propension to vomit should render the Stomach incapable of retaining the laxative Draught, so that no Operation is to be expected from it, then it will be necessary to appease that Symptom with the following, or some other Mixture of the like Kind, before we proceed any farther.

Take of Salt of Wormwood, one Scruple; pure Opium, a Grain, or a Grain and half; strong Mint-water, an Ounce; Syrup of Lemons, a Spoonful. Mix them together.

A Clyster is, also, to be injected once in four Hours, till the Body becomes soluble. These Clysters should always admit of Balsamics in their Composition, and may be made in the following manner.

Take of common Decoction, eight Ounces; Balsam of Capivi, dissolved in Yolks of Eggs, two Drams; Soap of Tartar, one Dram; Oil of Anise, two Drams. Mix them together.

In the mean time, warm Fomentations are to be applied all over the Region of the Abdomen, with Flannel Cloths.

Take of Chamomile-flowers, three Ounces; Juniper and Bayberries, each an Ounce; boil them in five Pints of Spring-water, to three. At the End, add of Caraway, Fennel, and Anise-seed, each half an Ounce; dissolve in the Strain'd Liquor, a Dram of Opium; and add a Pint of Rum.

A Semicupium, or Bath, made with the Leaves of wild Sage, Lavender, Rosemary, Chamomile, and other warm, nervous Plants, often help to alleviate the Pain, and afford considerable Relief to the distress'd Patient.

When the Pains begin to be mitigated, and the Body is somewhat open, it will be time to proceed to Purges of greater Efficacy; and chiefly, such as are composed with a Mixture of Mercurial Preparations.

Take of Calomel, a Scruple; the smaller *Pil. Cochiae*, a Scruple; Opobalsamum, enough to make them into four Pills; to be taken in the Morning, and repeated every Day, till the Pain remits, and the Body becomes soluble.

Opiates

P I L

Opiates may now be laid aside, unless the Urgency of the Symptoms still require the Continuance of them; or, at least, their Quantity may be lessened; and, in their stead, the Patient is to take two Scruples of Balsam of *Peru*, with Loaf-sugar, or in any other convenient Form, every six Hours: This Medicine will rarely be found to fail, when given at a proper Time of the Disease, and in a sufficient Dose; which has been too long neglected in Practice.

There is another Production of Nature, which Providence has plentifully bestowed on this Island, I mean the *Pisselæum Indicum*, or the *Barbadoes Tar*, as it is commonly called: This indeed is not so elegant to the Taste and Smell, as the fore-mentioned Balsam; but, where the Stomach can comply with it, I am sure it is of much greater Efficacy in this Distemper. I need not, surely, use many Arguments, to prevail with any Person under these Circumstances, to divest himself of Prejudices to a Remedy, which will so powerfully conduce to his Ease and Safety; for a Man must be strangely Palate-ridden, who will endure the highest Aggravations of Torture, and run the Risk of disabled useless Limbs, for the Gratification of Taste. I would, therefore, advise, that two Drams of this *Pisselæum* be given three times a Day, till the Disease be totally vanquished.

Upon the first Apprehension of the tingling Uneasiness along the Spinal Marrow, or the Numbness and Inability of the Limbs, the whole Length of the Vertebrae, as well as the Limbs, ought to be well chafed with a Mixture of this Tar, in double-distilled Rum, which will (if any thing in Nature can) avert the impending Paralysis.

This is a Method which I have successfully used, in a Malady which was generally attended with such fatal Consequences, under a different Management; and I could not forbear making it public, for the Benefit of an Island which has laid me under the strongest Obligations of Gratitude.

When the Palsy has been actually formed, either from injudicious Treatment, or the Violence of the Distemper, I have not been able to discover any means effectual enough to remove it, unless the Patient would be prevailed upon to leave the Island, and repair to *England*, where *Bath Waters* taken inwardly, and applied to the affected Parts by Pumping, with other proper Remedies, have often perfected the Cure. *Towne's Diseases of the West-Indies*.

PICUS MARTIS. The Woodpecker: A Bird of which there are many Species, besides that commonly known in *England*. It has the Reputation of being good for the Eyes, and to preserve and improve Vision: For this Purpose it is eaten dressed, or boiled in Soup: It is, also, applied to the Eyes; and the Blood is dropped into them, with the same View.

PIERRE DE COLIQUE. See *UMBRA*.

PIESMA, *πίσμα*, from *πίζω*, to press. The *Magma*, or Residuum, which remains after the fluid Part is pressed out: Thus, in the Expression of Oils, the Cake, or what remains in the Bag, is called the *Piesma*; and in this Sense it is used by *Hippocrates*. But *Dioscorides*, *Lib. 1. Cap. 106*. speaking of Bay-berries, calls their expressed Juice *Piesma*: And it is used by *Galen*, in the same Sense.

PIESTER, *πίστης*, or *πίστης*, a Press; from *πίζω*, to press.

PIESTRON, *πίστηρ*, from *πίζω*, to press. An Instrument recommended by *Hippocrates*, for breaking the Bones of the Head of a Fœtus, when too large to be otherwise extracted: It should seem to be a Sort of Forceps.

PIGMENTARIUS. A Vender of Ointments. *Rhodius ad Scriban. Largum*. An Apothecary, or Druggist.

PILA. A Ball. See *SPHÆRA*. It, also, signifies a Mortar, or a Pestle.

PILA MARINA. This is a Species of *Alcyonium*, or a round spherical Ball, found on the Sea-coast, among the Wrack. It is generally as large as a Person's Fist, but sometimes larger, and sometimes less: It is lanuginous, of a dark Colour, and formed by a Collection of Hairs, Sand, and other Impurities of the Sea, united by means of some glutinous Liquor. It is said to be proper for killing Worms, and preserving the Hairs, when applied externally. *Lemery des Drogues*.

The *Pila Marina* cannot be reduced to a Powder, till it is thoroughly calcined. Authors are of Opinion, that this Substance is good against scrophulous and stumous Disorders, not only on account of its drying Nature, but, also, in consequence of some other latent Quality. Neither can I totally reject this Opinion, since it is a Substance, whose saline Quality is not destroyed by Calcination. *Zwelfer*.

PILARELLA. The same as *PELADA*.

PILARIS MORBUS. The same as *TRICHIASIS*.

PILATIO. A minute Fissure of the Cranium, not larger than an Hair.

PILEUS, or **PILIOLUS.** See *CUCURBITA*. In Anatomy, the Coil with which some Children are born, is called *Pileus*, *Pileolus*, *Galea*, and *Fitta*.

P I L

PILI ZENII. The Hairs which grow about the Scut of an Hare. *Rulandus*.

PILIMICTIO. A Discharge of Substances resembling Hairs, with the Urine. See *TRICHIASIS*.

PILIPOC *Philippinarum Insularum*. *Nieremb*.

This Plant is of two Kinds, the Male, and the Female: The first is the greater, and has larger Leaves, and grows among Rocks; the other, or Female, is less, and grows in Plains: On the Roots of them both grow dark-coloured Tubercles, of the Bigness of a Man's Fist: The Trunks, which are of a dark-brown Colour, and without Joints, being cut athwart, are divided into a sort of Pellicles, like the Membranes or Coats of Onions: The Leaves are like those of Bay, and are remarkably acuminate; are produced in a moist and shady Situation, and roll themselves about the Trees. The Root is of Use for venomous Bites, and in Potions; but is slow in Operation. *Raii H. P.*

PILORIS. A very large Species of Rat, found in *Martinito*, which smells like Musk. The Inhabitants eat them: But they are of no Use in Medicine.

PILULA. Pill.

The Form of Pills is principally designed for such Things as are too nauseous to be taken any other Way; or are most readily fitted, by their natural Texture, to this Kind of Management: Of the first Kind are the *Aloes*, *Colocynth*, and the like, which are thus best concealed from the Taste; and of the latter are most Gums, which, with very little Trouble, are reduced into Pills.

But this Form being generally the most troublesome to take, as few Things should be contrived into it as possible; that is, such only as, by their Irksomeness in going down any other Way, make it necessary to conceal them by this means. But this Reason ought to extend only to such Things, which are of sufficient Efficacy, not to make above four or five small Pills for a Dose. Thus, the Bark, in Powder, and all the lighter Species, which are given in the Quantity of half a Dram, or upwards, for a Dose. If, to avoid the Irksomeness of other Forms, Recourse should be had to this, a necessary Quantity of Moisture, to reduce them into it, would make one Dose into ten, twelve, or fifteen ordinary Pills, which are more than any one can be imagined well to get down; for half a Dram in the Mass makes five middle-sized Pills, and half a Dram of dry Powder will take up above double its Quantity of Syrup, to bring it into a Mass of due Consistence. The gummy Substances, indeed, are thus reducible by Liquor, which will but little increase their Bulks; and for this Reason, also, they have a peculiar Fitness for this Form.

But there are some Things absolutely unfit for Pills, by reason of their natural Texture and Properties, except in small Quantities; and these are all the volatile Salts, and most of the fixed ones. The first heave and ferment them into unreasonable Bulks; and the last render a Mass so brittle and crumbly as make it almost impossible to be worked into Pills; though both these Inconveniencies may, in some measure, be avoided, by contriving to mix with either of these Salts other Things which are very tenacious, as some of the Extracts and Gums; and this makes the *Pilule Ecphraclieæ*, now directed in the Dispensatory, at first of a tolerable Consistence.

One very material Thing, likewise, to be consider'd in this Form, whether officinal or extemporaneous, is, that the Liquor or Moisture, wanted to give a Consistence, have the most convenient Fitness to the Thing requiring it. Thus dry light Powders will not make up with any thing thinner than Syrup; and some of the heavy ones, as *Cinnabar*, and most of the *Mercurials*, will hardly do with any Moisture of a lower Consistence than Honey or Conserve. But the gummy Substances, especially those which most approach to an oily or resinous Texture, as *Galbanum*, *Opopanax*, *Myrrh*, and the like, will not so well make up with Syrups or Conserve, not only on account of increasing their Bulks too much, but because they will not so well incorporate with them, as with spirituous and more penetrating Liquors. As this Form, therefore, must have somewhat in it adhesive and tenacious, where it is not in the dry Substances, it must be sought for in a proper Moisture to hold them together; and where it is sufficiently already in those Substances, as in the Gums, the thinner Liquors are best, to give them a Consistence, or such as are better suited to incorporate with them, than aqueous Moistures, as the terebinthinous Balsams; for some fat Substances will refuse a Syrup, at the same time that they will readily take in Turpentine, or any thing of like Disposition.

Among the officinal Pills, there are but few that do not take in something purging, and those are as follow: The *Pilule Gummose* were never in the *London Dispensatory* before, tho' long ago in some others; so that it may not, perhaps, be yet much brought into the Shops; but it is a very uniform Composition; only the *Mithridate* will not so readily incorporate with

P I L

with such Materials as Spirit of Castor, or any terebinthinous Substance. Such things are, likewise, sooner brought into a Mass, with a Mortar a little warmed. The Storax-pill has stood long approved for an excellent Composition; by the frequent Prescription of it in Catarrhs, and such-like Defluxions; but the Texture of its Materials, though most of them gummy, partake so little of an oily Principle, that they readily make up with a Syrup into a very good Consistence. The Pilulæ de Cynoglossæ are calculated for the same Intentions, and hardly to be known from this in the Mass, the Ingredients being nearly the same in both; but the Storax-pill is generally preferred, as a shorter and more uniform Composition. The Laudanum is subject to grow brittle, and sometimes a little mouldy at the Top; both which are prevented by keeping it close from the Air. The Quantity of Opium is much better ascertained in this, than in any liquid Forms; and, with a little Trouble, this may be dissolved into Draughts for extemporaneous Uses, though it is the most ready for a Bolus, or Pills.

Among those which take in Cathartics, some do it so sparingly, that they ought rather to be deemed Alterants than Purgers; such as the Aloephanginæ Fœtidæ, and Stomachicæ cum Gummi; all which so abound with Ingredients of other Intentions, that the purging ones are almost lost in them. *Sassaparilla* finds great Fault with the first of these; but it is so very little used now, that it is hardly worth a critical Examination here; and especially as the Tinctura Sacra is a Medicine much better contrived for the same Intentions, on all Accounts, both for Taking and Efficacy. The Pilulæ Fœtidæ cannot be justified for a very uniform Composition; but, in the main, it takes in so many Things which are efficacious in hypochondriacal, hysterical, and other nervous Disorders, that it is generally used with Success; but if so much of the Juice of Leeks be applied in dissolving the Gums, that it wants but little of the Syrup to bring it to a Consistence, it will be very subject to grow mouldy with keeping. In this, and all other Compositions which take in Ingredients so different in Textures, all that will powder, ought to be so reduced together; and, when the Gums are strained, after dissolving them with a moderate Heat, in the Liquor directed, they are put together in a Mortar, and beat into a due Consistence, with a proper Quantity of Syrup. The Oil of Amber, or any thing else of like Nature, is best rubbed first into the dry Powders. The Pilulæ Stomachicæ cum Gummi continue to be sometimes ordered; but they are not so much esteemed as they were formerly; the Tinctura Sacra, also, taking place of it to better Advantage. There are, likewise, some other Cathartics of weak Efficacy, from their Mixture with other Things, which are so little used, that they deserve not much Examination; as the Pilulæ de Agarico, de Aloe lota, de Ammoniaco Magistrales, Cochiae majores, Diambrae, and Mechoacanna; all which are hardly ever made or prescribed. The Pilulæ Ecephraëticæ, for the Reasons already given about Salts contained in Pills, are of so brittle a Consistence, that they, likewise, are seldom to be met with in the Shops, or in Prescription. The same Disadvantage, also, have the Pilulæ de Rhabarbaro, de Scammonio, and Tartareæ.

The Pilula Ruffi is the only one in this Rank, which is much approved in common Practice; and indeed its Ingredients are so few, and those so good in the Intention of a gently purging Stomachic, that they very well deserve this Preference: This, and the Elixir Proprietatis, take in the same Ingredients, and differ in little else than their respective Forms: This Pill, as to its Goodness, is so much judged of by its Colour, which is coveted of a bright yellow, that most, if not all, Compounders bring it to a Consistence with Syrup of Lemons, which much improves it in that respect, instead of Syrup of Wormwood, which would greatly hurt it.

Among the most efficacious Purges, and those most commonly in Use, are the Pilulæ Cochiae minores, e duobus, and Pilulæ Rudii. The two first differ in little else, than in one's having the Aloe, and the other not, which makes the latter stronger, the Colocynth and Scammony being most powerful Cathartics. The Goodness of both is judged by the strong Scent of the Oil of Cloves, which, being the most chargeable Ingredient, is most likely to be limited in its Quantity. The Pilula Rudii is of the same Contrivance as the Aloephanginæ; but is not so crowded with unnecessary Ingredients, and, therefore, takes in the efficacious ones in larger Quantities, so that its Operation is brisk enough in a Dose of half a Dram. But, in the common Way of making the Spirit, necessary to extract the Spices, and other hard Ingredients, most of it is drawn over before the Scammony and Aloe are put in; and after that it is distilled, so that the Remainder is near in the State of an Extract, or about the Consistence of a Syrup, the Aloe is melted in it, and the Scammony sifted in, when powdered. The Pilulæ de Gutta Gamandra have nothing difficult in their Composition, but are of a more brittle Consistence, and more liable

P I L

to gripe in their Operation, upon account of the vitriolated Tartar, than they would be without it: Though this seems to be put into many of this Class, which abounds with resinous Ingredients, as a means to divide them; but it is extremely racking to the Stomach and Bowels, and seems to be well supplied by the common Salt of Tartar.

There is not much to be learned from Examples of occasional Prescription in this Form, besides what is common to every Form; for there is required nothing particular here, more than what hath been already taken notice of, concerning a proper Consistence, and the not exceeding a certain Number in a Dose.

PILULÆ DE AGARICO: *Pills of Agaric.*

Take of the Troches of Agaric, one Ounce; the Species of Hiera, half an Ounce; Myrrh, six Drams; Syrup of Buckthorn, a sufficient Quantity to make into a Mass for Pills: The Dose is from a Scruple to a Dram.

PILULÆ ALOEPHANGINÆ. See ALOEPHANGINÆ.

PILULÆ DE ALOE LOTA. See ALOE.

PILULÆ DE AMMONIACO MAGISTRALES. See AMMONIACUM.

PILULÆ BALSAMICÆ. See CYTISO-GENISTA.

PILULÆ COCHIAE MAJORES ET MINORES. See COCHIA.

PILULÆ DE CYNOGLOSSO. See CYNOGLOSSUM.

PILULÆ DIAMBRÆ: *Pill Diambra.*

Take of new Gum Guaiacum, and the roasted Aloe, each three Drams; simple Hiera Picra, a Dram and half; Mastich, a Dram; the Species Diambrae, without the Perfumes, half a Dram: Let these all be reduced into a fine Powder; and, with a sufficient Quantity of Peruvian Balsam, be made into a Mass of a due Consistence for Pills.

PILULÆ E DUOBUS: *Pills of two Things.*

Take of Colocynth and Scammony, each an Ounce; Oil of Cloves, half a Dram; Syrup of Buckthorn, a sufficient Quantity to make into a Mass of a due Consistence for Pills. The Dose is from fifteen Grains to half a Dram.

PILULÆ ECEPHRACTICÆ: *Ecephraëtic Pills.*

Take of Gentian, Rhubarb, Gum Guaiacum, Salt of Steel, and Salt of Wormwood, of each one Ounce; of the Pilulæ Aloephanginæ, two Ounces; Syrup of Buckthorn, a sufficient Quantity, to make all together into a Mass of a due Consistence for Pills. The Dose is from fifteen Grains to half a Dram.

PILULÆ FOETIDÆ: *The foetid Pills.*

Take of Aloe, Trochisci Alhandal, Opopanax, Ammoniacum, Sagapenum, Myrrh, and the Seeds of Rue, of each five Drams; of Scammony, and Asa-fœtida, of each three Drams; of Turpeth-root, half an Ounce; of the lesser Spurge prepared, and Hermodactyls, of each two Drams; of Ginger, one Dram and an half; of Spikenard, Cinnamon, Saffron, and Castor, of each one Dram; of Euphorbium prepared, one Scruple; of rectified Oil of Amber, half a Dram: Let the Gums be dissolved in the Juice of Leeks, and strained; then add the Powders, and mix them well together, and make into a Mass, with a sufficient Quantity of Syrup of Buckthorn.

These are the *Pilulæ foetidæ majores* of *Mesue*, and which our College transcribed exactly into their first Dispensatory, as, also, it is in the *Augustan* in the same manner; but, on a Review, the Bdellium hath been expunged, as having no Virtues corresponding to the Intention of the Whole; the Euphorbium hath been, also, lessened by half its Quantity, because of its excessive Heat and Pungency. Some other small Alterations are, also, made, that are not of Moment enough for any particular Notice. *Quercetan* hath a Composition under the Title of *Pilula de Euphorbia*, not greatly unlike these, and which are transcribed by *Schröder*, who hath, in Book 4, taught many Ways how to correct the Euphorbium, as by baking it in a Citron or Lemon, or dissolving and washing it with various Acids; which Means are imagined to abate its caustic, fiery Nature. The *Augustan* Dispensatory, also, orders it, for the same End, to be reduced to a kind of Pulp, or Mass, with Oil of sweet Almonds, and then macerated warm in any acid Juices; but the Quantity it is here so reduced to, requires no such great Trouble. *Zwelfer* greatly recommends this Composition in arthritic Affections, and cutaneous Foulnesses, besides many other

P I L

Cases ; and the present Practice gives some Reputation to its Virtues, by directing it sometimes in nervous and hysteric Disorders, to which last Intention the College seem to have had a particular Regard, by the Addition of *Asa-foetida*, which was never in it before : But the Mass is somewhat difficult to keep, without moulding ; which seems owing to the Juice of *Leeks* used for dissolving the Gums, and not giving Body enough to keep it from drying : The best way is, to confine it in an oily Bladder, and a leaden Pot. This is a well-contrived Purge, of all kind of Humours which lay a Load upon the Nerves, and the principal Spring of the Animal Machine ; for it is full of hot and penetrating Parts ; and, as the Scammony acts as a Cathartic in the more open Passages, others carry the same Quality into the remotest Recesses, and clear away watry and pituitous Humours from all the Glands and Capillaries ; but particularly those mucous Foulnesses, which frequently disorder the Womb. For these Reasons this is a notable Purge in all Distempers of the Head, as Apoplexies, Epilepsies, Palsies, and the like, for hypochondriacal and splenetic Affections ; and promotes the uterine Cleasings, so as to assist in the Cure of most Complaints from that Quarter. Rheumatisms, Schrophulas, and the Gout, it is calculated for ; and the most extreme Parts will be drained of their Superfluities by it. But, for these extraordinary Purposes, it is to be frequently repeated, and to be given in small Doses, that it may not run off too fast by Stool ; for the more such things are brought to the Operation of Alteratives, the more effectual are they to answer any Intentions of Moment ; an Alterative in the Blood-vessels operating by the same Means as a Cathartic in the Bowels : The general Dose is from one Scruple to four Scruples.

PILULÆ GUMMOSÆ : *The Gum-pill.*

Take of *Opopanax*, an Ounce ; of *Gum Ammoniacum*, *Galbanum*, and *Sagapenum*, of each half an Ounce ; of *Myrrh*, two Drams ; of *Asa-foetida* and *Castor*, of each three Drams ; of *Oil of Amber*, one Scruple ; of *Mithridate*, a sufficient Quantity to make into a Mass of a due Consistence for Pills : The Dose is from fifteen Grains to half a Dram every Night, or oftener.

PILULAE DE GUTTA GAMANDRA : *The Gamboge-pill.*

Take of *Resin of Jalap*, *Scammony*, *Gamboge*, and *Calomel*, of each half an Ounce ; of *Gum Ammoniacum*, dissolved in the Juice of the *English Orrice*, three Drams ; of *vitriolated Tartar*, two Drams ; of *Mastich*, one Dram ; of *Saffron*, one Scruple ; of the *Spirit of Turpentine*, forty Drops : And make the Whole into a Mass of a fit Consistence for Pills, with a sufficient Quantity of *Syrup of Buckthorn*.

This is a very rough Purge, and cannot safely be given from above ten Grains to half a Dram. It is reckoned a great Purger of Water, and is therefore principally given in Dropsies, and such-like Cachexies, that are attended with too great an Excess of Bulk ; in which Case it is a powerful Medicine, but is not often prescribed.

PILULAE MECHOCANNAE : *Pills of Mechoacan.*

Take of *Mechoacan-root*, half an Ounce ; of *Turpeth*, two Drams ; of the *Leaves of Mesereon*, macerated in *Vinegar*, and dried, of *Dwarf-elder-seed*, and the *Troches of Agaric*, of each two Drams ; of the *Spurge-root* prepared, and *Mastich*, of each one Dram and an half ; of *Mace*, *Cinnamon*, and *Sal Gem*, of each two Scruples : Let all these, clean-powdered, be made into a Mass, with *White-wine*, and that dried and powdered again ; and lastly, be beat up into a Mass, of a Consistence fit for Pills, with a sufficient Quantity of *Syrup of Buckthorn*.

PILULAE DE RHABARBARO : *The Rhubarb-pills.*

Take of *Rhubarb*, one Ounce ; of *Resin of Jalap*, and *Tartar of Vitriol*, of each two Drams and an half ; of the chymical *Oil of Nutmegs*, half a Dram ; of the thinner *Extract of Gentian*, a sufficient Quantity to make them into a Mass of a fit Consistence for Pills.

PILULAE RUDII.

Take of *Colocynth*, six Drams ; of *Agaric*, *Scammony*, black *Hellebore-root*, and *Turbeth-root*, of each half an Ounce ; of *Succotrine Aloes*, one Ounce ; of *Cinnamon*, *Mace*, and *Cloves*, of each two Scruples : Let the *Colocynth* be cleared from its Seed, and cut small, the *Agaric* shaved into Chips, and the *Hellebore*, *Turbeth*, and *Spices*, be grossly bruised ; and, pouring upon them four times as much *Spirit of Wine*, let them macerate four Days together in a moderate Heat ; then strain and press out hard the *Liquor*, in which dissolve the *Scammony* and *Aloes*, after

P I M

they have been before duly cleansed ; last of all, put the Whole into an *Alembic of Glass*, and draw off so much of the superfluous Moisture, as will leave the Remainder as thick as *Honey*, for a Mass to be made into Pills.

It may be given from fifteen Grains to two Scruples, and is effectual for all the Purposes the *Aloephaginae* stand recommended for. This, at present, is in great Esteem in the Shops for an Head-purger ; and it is, indeed, the principal Pill in Use in most Cases where Cathartics are prescribed in this Form.

PILULAE RUFFI five COMMUNES : *Ruffy's, or the Common Pill.*

Take of the best *Aloes*, two Ounces ; of choice *Myrrh*, one Ounce ; of *Saffron*, half an Ounce : And make them all together into a Mass, of a Consistence fit for Pills, with a sufficient Quantity of *Syrup of Wormwood*.

This is accounted a good Stomach-purge, and with good Reason ; for it greatly warms and strengthens it, and but very gently purges. It is peculiarly good in cold Constitutions and Indigestions, and will many times, without other Help, cure a Green Sickness ; in which Case it greatly promotes the menstrual Discharges, and opens uterine Obstructions. It may be given from fifteen Grains to one Dram, but this is not so fit for a Catarrh, as an Alterative ; and therefore ought rather to be given in moderate Doses, and be long continued.

PILULAE DE SCAMMONIO : *Pill of Scammony.*

Take of *Jalap-root*, one Dram ; of *Scammony*, and *Vitriol of Tartar*, of each one Scruple ; of the chymical *Oil of Nutmegs*, six Drops ; the more liquid *Extract of Gentian*, a sufficient Quantity to make into a Mass for Pills. Its Dose is from one to two Drams.

PILULAE STOMACHICAE CUM GUMMIS : *Stomachic Pills with Gums.*

Take of the finest *Aloes*, one Ounce ; of *Sena-leaves* cleansed, five Drams ; of *Gum Ammoniacum*, dissolved in *Vinegar of Squills*, half an Ounce ; of *Mastich* and *Myrrh*, of each one Dram and an half ; of *Saffron*, and *Salt of Wormwood*, of each half a Dram : Make them into a Mass for Pills, with a sufficient Quantity of *Syrup of Buckthorn*.

PILULAE DE STYRACE : *Storax-pill.*

Take of *Storax*, *Olibanum*, *Myrrh*, the inspissated Juice of *Liquorice*, and *Opium*, of each half an Ounce ; of *Saffron*, one Dram : Make them all into a Mass for Pills, with a sufficient Quantity of *Syrup of white Poppies*.

Schroder says, that *S. Glossæus* used it, with great Success, to breeding Women, who were in Danger of Miscarriage from the Trouble of frequent Coughing. It is much, that the *Augustan Dispensatory*, as well as the *Pharmacopæia Regia*, hath omitted it ; as it is a very good Medicine, and now much used in common Prescription against Catarrhs. There is one Grain of *Opium* in every six Grains of this Mass ; and therefore it ought, in the extreme Dose, not to exceed twelve or fifteen Grains. It has all the Virtues of the *Pilula de Cynoglossæ*, but has somewhat more than double the Quantity of *Opium* in that. It is much more used, than any other of this Intention ; but it ought to be with Caution.

PILULAE TARTAREAE : *The Tartar-pill.*

Take of the best *Aloes*, three Drams ; of *Gum Ammoniacum*, cleansed in *Vinegar of Squills*, half an Ounce ; of *Tartar of Vitriol*, half a Dram : Make them together into Pills.

PILUM. A Pestle.

PILUS. An Hair. See CAPILLUS.

PIMENTA. *Jamaica Pepper*. See CARYOPHYLLUS.

PIMPINELLA.

The Characters are ;

The Flower is monopetalous, rotated, and generally cut into four Segments, to the very Centre, and adorned with four or more very long Stamina, and herbaceous ; minute, and scarce visible Bractææ ; for which Reason some pronounce it Apetalous. The Ovary becomes a Fruit, which is generally quadrangular, acuminate at both Ends, and consisting sometimes of one, sometimes of two Capsules, full of oblong Seeds.

Boerhaave mentions eight Species of *Pimpinella* ; which are,
1. *Pimpinella* ; maxima ; *Canadensis* ; alba ; spicata. *Cor- nut.* 175.

2. *Pim.*

P I M

2. Pimpinella; spicâ brevi, rubrâ. *M. U.* 57. *Sanguisorba major, flore spadiceo.* J. B. 3. 120. *Sideritis, II. Dioscoridis, major.* Col. 1. 124.

3. Pimpinella; sanguisorba; minor; lævis. *C. B. P.* 160. *Tourn. Inst.* 157. *Boerb. Ind. alt.* 2. 99. *Pimpinella & Sanguisorba.* Offic. *Pimpinella hortensis.* Ger. 889. Emac. 1045. *Pimpinella vulgaris sive minor.* Park. Theat. 582. Raii Hist. 1. 401. *Sanguisorba minor.* J. B. 3. 113. Raii Synop. 3. 203. BURNET.

It grows in hilly Pastures, and flowers in June, and the Leaves are in Use. The Plant is alexipharmic, vulnerary, and pulmonic; and is principally used in Catarrhs, Affections of the Lungs, a Phthisis proceeding from Erosion, in malignant Diseases, Loosenesses, and Hæmorrhoids: It prevents Abortion, and is a Strengtheners: Outwardly it is of Service in all Kinds of Hæmorrhages. *Dale from Schroder.*

There grows to the Root of this Plant, in some Places, a red Grain, which is used in dying a crimson Colour: Whence some take it for the Coccus, and call the Root by that Name, as we are informed by *Lacuna* and *Anguillara*.

What is related of the Virtues of this Plant, may be reduced to two Heads; first, That it is cardiac and alexipharmic: Hence the green Herb is put into Wine, to exhilarate the Heart, and to improve the Wine itself, by communicating to it an aromatic Flavour and Taste, much like that of a Melon: It preserves, also, from the Pestilence, and other contagious Diseases. In the second Place, it is an Astringent: Whence it is of excellent Service in an immoderate Flux of the Menfes, Fluxes of the Belly, all Sorts of Hæmorrhages, and in drying, conglutinating, and healing Wounds and Ulcers. Mr. Boyle used to exhibit the Powder of the dried Herb or Root, with Sugar of Roses, for an Hæmorrhage of the Nose, Spitting of Blood, and a Consumption of the Lungs; the same, without the Sugar, sprinkled on cancerous Ulcers, restrains them from spreading. *Solenander, Lib. 3. Consil.* 27. recommends a Conserve of the Leaves, with a Draught of the simple Water afterwards, for Pissing of Blood; for which Purpose, also, the candied Root, he says, may be used. An Huntsman belonging to Henry the Second, King of France, solemnly affirm'd, that Pimpinella was of such Efficacy for preventing an Hydrophobia, that whoever should eat it for some Mornings together, either in a Salad, or any other way prepar'd, would never be visited with the least Symptom of that Distemper. *Palmar. de Morsu Canis rabidi.* *Panchorius* relates, that a King of Chabam, after a Battle, cured fifteen thousand wounded Men with the Use of Pimpinella. *Raii Hist. Plant.*

4. Pimpinella; Sanguisorba; eleganter laciniata. *H. R. Par.*

5. Pimpinella; Sanguisorba; minor; semine majore, & crassiore. *Bot. Monsp.*

6. Pimpinella; Agrimonioïdes; odorata. *H. R. Par.*

7. Pimpinella; spinosa; seu sempervirens. *M. U.* 57. *Potterio affinis, foliis Pimpinellæ, spinosæ.* *C. B. P.* 388. *Potterium quibusdam, sive Pimpinella spinosa.* J. B. 1. 2. 410. *Χαλκίον Anguillæræ, Potterium Dalechampii.* Clus. H. 108. T. Voy. 1. 158.

8. Pimpinella; major; Hispanica, altera; conglomerato flore. *H. R. Par. T.* 157. *Boerb. Ind. alt. Plant. Vol.* 2.

These Pimpinellas have the Appellation of *Sanguisorba*, to distinguish them from the Pimpinellæ Saxifragæ, which are of a very hot Nature; but the Pimpinellæ Sanguisorbæ are astringent. The Plant is aromatic, gently astringent, and of excellent Service in a Relaxation of the Fibres, and a too thin and fluid State of the Blood: It is prescribed in an immoderate Flux of the Menfes, to be eaten with Bread and Butter, or drank like Tea; so used, it renders all manner of Poison of no Effect. The five first Species are commended as Preservatives against the Pestilence. Pimpinella is infused, also, in Wine, to be used where a Laxness of the Part requires Astringents; and there is scarce, among Vulneraries, a better Plant for repressing the Flux of Blood in an Hæmoptoe: It is of singular Virtue in the Dysentery, both by correcting the Acidity of the dysenteric or peccant Matter, and by gently astringing the relaxed Fibres of the Intestines. There is prepared a Conserve of the Flowers, which is of extraordinary Efficacy in the above-said Disorders. The Leaves infused in Wine, or common Water, are good for the Stone and Gravel in the Kidneys. *Hist. Plant. adscript. Boerhaav.*

PIMPINELLA is, also, a Name for several Sorts of *TRAGOPHYLLUM*; which see.

PIMPINICHI, *Arbor lætescens.* J. B. On all the Coasts of the Indian Continent, says *Monardes*, there grows a small Tree, like an Apple-tree; the Indians call it *Pimpinichi*, from whose Branches being cut off, there immediately flows a milky Humour, somewhat thick and viscous.

Three or four Drops of this Juice, being taken inwardly, purge very strongly, Bile and Water, by Stool: It is drank in

P I N

Wine; or the Powder of it, inspissated, is swallow'd, but in a small Quantity, because of its Violence. Upon taking some Wine or Broth, its Operation is checked, and ceases on a sudden: And the same is reported of the Indian Ricinus. *Hernandez. Raii H. P.*

PINASTER. See PINUS.

PINDAIBA *nonnullis Ibira.* Pison. *Arbor baccifera Brasiliensis Fructu Piper respiciente.* A very tall Tree growing in Brasil, which, on account of its acrimonious Fruit, and other Qualities, much resembles the Brazilian Pepper: The Leaves are small, acuminate, and like those of the Olive-tree: The Berries are green in the rainy Months, but turn red in December and January, when they ripen, and fall off; but, being dried, they turn black, and burn the Tongue, and have an aromatic Taste, being separated from the black oblong Seed contained in them, which smells of Juniper.

The Berries, eaten fasting, corroborate a weak Stomach, and discuss Flatulencies; bruised and applied, they heal the Bites of Serpents: Of the same, dried and pulverized, they prepare a Gargarism against cold Affections of the Throat: They are boiled, in order to be kept in Shops, and serve instead of Pepper, for culinary Purposes. *Raii H. P.*

PINDOVA. The Name of a Species of Palm.

PINEA. A Name for the *Ananas aculeatus; fructu pyramidato; Carne Aurca.*

PINEALIS GLANDULA. The Pineal Gland. See CEREBRUM.

PINEATUM. A Name for various Compositions, the Basis of which are Pine-nut-kernels.

PINEI Nuclei Maluccani sive purgatorii. J. B. *Pinus Indica Nucleo purgante.* *C. B. Pinei Nuclei Maluccani.* Park. There grows, says *Acosta*, in some Gardens of Malabar, and, also, wild in some Woods, a Tree of the Bigness of a Pear-tree, whose Leaves are of a Watry-green beneath, and of a Deep-green on the upper Face, and are very tender and soft: They are of a very acrid Taste, and vellicate the Tongue for a long while afterwards: The Fruit is triangular, of the Size of a Filberd, and divided into many Capsules, containing each a round Sort of white Seed, equal to a Pine-kernel, when taken out of its Shell.

We are to consider, says *J. Bauhine*, whether these are the cathartic Pine-nuts, of which *Monardes* gives the following Account: 'There is exported, he says, from New Spain, a Sort of Pine-kernels, with which the Indians purge themselves, whose Example is imitated by very many in these Countries: They are like our Pine-kernels, growing in large Strobili, like the beardless Ears of Mayz, with a softer and blacker Shell than ours, round, white on the Inside, fat, and sweet in Taste.

The Indians, as *Acosta* says, take a couple of the Kernels, peel them, and then pound them, and mix them in Clysters, against Difficulty of Urine, and the Pain of the Sciatica; or exhibit them in Cock-broth, for the Evacuation of putrid, stinky, gross, and cold Humours, and particularly for the Cure of an Asthma: They anoint the Impetigo with these Kernels, bruised in Water; and so cure it; but they are very burning. The cathartic Pine-kernels, as *Monardes* says, purge very strongly Bile, Phlegm, and Water; and, though milder than Filberds, excite Vomiting: When roasted, they operate with less Violence, and fewer Gripes: They are exhibited in chronic Diseases, and have a peculiar Virtue of evacuating gross Humours. *Raii H. P.*

PINGUEDO, *πίμα, πίαρ, πίμαρ, λίπα.* Fat. See ADIPS.

Official Fats are, also, called *Axungia*. Fats in general are heating, moistening, emollient, absterging, digestive, generative of Pus, and more or less anodyne. Every Fat in particular partakes of the Nature of the Animal whence it was taken; the weakest is the Fat of Swine, because that Animal is of a cold and humid Nature: The Fat of a Calf is somewhat stronger, next that of the gallinaceous Kind, and the strongest of all is the Fat of a Goose. It is to be observed, that whenever Fat is mention'd simply, or without any Note of Distinction, we are to understand it of the recent unsalted Fat of Swine.

Pinguedo mineralis; what it is, see *Theat. Chym. Vol.* 4.

PINGUICULA. A Plant so called by *Gesner*, because its Leaves are fat to the Touch, as if rubbed over with Oil, or Butter. Of this Ray makes four Species; which are,

1. *Pinguicula Gesneri.* J. B. *Pinguicula sive Sanicula Eboracensis.* Ger. Park. *Sanicula montana Flore calcari donato.* *C. B. BUTTERWORT, YORKSHIRE SANICLE.*

The Leaves, which are six or seven in Number, and sometimes more, spread themselves upon the Ground, and are about two Inches long, and one broad, of a yellow Colour, inclining to a pale Green, fat to the Touch, and shining as if they were rubbed over with Butter or Oil. From amidst the Leaves arise Pedicles, a Palm or more in Height, and bearing at the very Top a single purple, violet, or white Flower, like a Violet, but

mono-

P I N

monopetalous, furnished with a long Spur, and divided into five Segments: It grows in moist and marshy Places, and on plashy Downs, where Springs of Water abound.

2. *Pinguicula Flore albo minore, Calcar brevissima.* This was observed by Ray, in moist Places on the Tops of Mount Jura.

3. *Pinguicula Flore amplo purpureo, cum Calcar longissimo.* This is found in the same Places as the preceding.

4. *Pinguicula Cornubiensis Flore minore carneo.* The Leaves of this Species have their Margin reflexed, and, as it were, convolved; are almost pellucid, and striated with red Veins. Ray observed this Species to grow in marshy Places, about Kilkhampton, and other Places in Cornwall.

The Leaves, bruised, and applied, are said to cure recent Wounds and Bruises: It is usual for the Country-people to cure Chaps in their Hands, and Tumors and Fissures in the Udders of their Cows, with the Fat and buttery Juice of this Herb: Hence it took the Name of *Yorkshire Sanicle*. The common Sort of People in *Wales* prepare from it a Syrup, with which they purge themselves, and those who belong to them; and, also, boil the Herb in Broths, for the same Purpose; for it purges Phlegm briskly enough: They make, also, an Ointment of the same, which is of great Use in Obstructions of the Liver. *Dalechamps* affirms, that the Root baked, and applied in Form of a Malagma, cures the Sciatica on the third Day, and that the same bruised and applied, cures all Sorts of Pains. *Camerarius* assures us, that it is a vulnerary Herb, and is of excellent Service in Hernias of Children. It dyes Hairs yellow, and serves Women instead of Gum for curling their Hairs. *Rai H. P.*

PINIPINICHI. The same as PIMPINICHI.

PINNA. A Wing. But the lateral and inferior Parts of the Nose are called the *Pinnae* thereof; and the superior broad Part of the external Ear is, also, called the *Pinna* thereof.

PINNA, or PINNA MARINA, is a Sea Shell-fish of a conical Form, and separated into two Parts, which are rough without, and of a darkish Colour, but smooth, green, and resplendent within: Some of them are two Feet in Length, and about half a Foot in Circumference, towards the Middle. This Shell is found upon the Coast of the Sea, either among the Wrack, or the Sand. There are various Species of them, which contain a small Fish, which is an excellent Aliment, and in which there are sometimes found large Pearls.

From the superior Part of the Shell, which terminates in a very obtuse Point, arises a sort of Cord, or small Portion of redish or dark-colour'd Silk, by some Naturalists, though, perhaps, not very properly, called *Byssus*. This Cord helps the Animal sometimes to fix itself to the Rocks: This Silk, when taken from the Fish, and prepared, is made into Stockings, and other Cloaths. The Fish, when eaten, excites Urine; and the Shell, when reduced to a Powder, provokes Urine, and renders the Patient collive. *Lemery des Drogues.*

PINNACULUM FORNICIS GUTTURALIS. The Uvula.

PINO. The Name of a sort of Nettle, which grows in *Erasil*.

PINOQUACU. A Name for the two Species of *MA-MOERA*.

PINUS.

The Characters are;

The Leaves are longer than those of the Fir-tree, and always grow by Pairs, out of one common Sheath: The Flower is male, amentaceous, consists of Stamina, and is produced at a Distance from the Fruit of the same Tree. The Fruit is a Cone, consisting of tetragonal Tubercles. Among the Squamæ, which are excavated into two Pits, are two Stones, frequently winged, inclosing an oblong Kernel.

Boerhaave mentions three Sorts of Pinus; which are,

1. Pinus; sativa. *C. B. P.* 491. *Rai Hist.* 2. *Tourn. Inst.* 585. *Boerb. Ind. alt.* 2. 179. *Pinus*. *Offic.* *Pinus sativa sive domestica.* *Ger.* 1173. *Emac.* 1355. *Pinus urbana sive domestica.* *Park. Theat.* 1354. *Pinus officulis duris, foliis longis.* *J. B.* 1. 248. THE PINE-TREE.

This is a large spreading Tree, whose Branches are clothed with long, slender, sharp-pointed, green Leaves, two growing together in a common Sheath, which are somewhat hollow on the Inside; on the larger Branches grow large, loose, yellow Catkins, which come early in the Spring; and, after them, large, oblong, round-pointed Cones, heavy and firm, composed of several high, brown, hard Scales, between which lie the Kernels, which are longish and white, of a pleasant Taste, included in an hard Shell, and covered immediately with a thin brown Skin. The Pine-tree grows wild in several Parts of *Italy*, and is usually planted here in Gardens.

The Nuclei, or Kernels, which are principally used, are of a balsamic nourishing Nature, good for Consumptions, Coughs,

P I N

and Hoarseness, restorative, and serviceable after long Illness; and, likewise, help the Strangury, Heat, and Sharpness of Urine. *Miller's Bot. Off.*

It has been a Subject much disputed among the Learned, by what Name the *Pinus* of the *Latins* was called among the ancient *Greeks*. *J. Baubine* is persuaded, that *πεύκη* (*Peuce*) is the ancient *Greek* Name for the *Pinus*; and his Brother *Caspar*, with *C. Clusius*, *Bodæus a Stapel*, and other learned Men, are of the same Opinion. For my part, I am inclined to think, with our Countryman *Turner*, that the *πεύκη* of *Theophrastus* is indeed the Tree which the *Latins* call *Pinus*; but that *Pliny* took the *πίτυς* (*Pitys*) of the *Greeks*, for the *Pinus*, because that Author renders *πίτυκαμπαι* (*Pityocampæ*) by *Eruce Pinorum*, *The Caterpillars of Pine-trees*, not of the *Picea*, or Pitch-tree. As for the *πίτυς* (*Pitys*) of *Theophrastus*, we are not certain what Tree it was; but *J. Baubine* thinks it likely to be the *Pinaster*, or Mountain-pine. The Occasion of this Uncertainty, and Mutation of Names, seems to be owing to the *Arcadians*, who, as *Theophrastus* writes, called *πίτυς* what the other *Greeks* called *πεύκη* and gave the Name of *πεύκη* to what the rest called *πίτυς*.

The Bark and Leaves of all the Species of Pine-trees are refrigerating and astringent; whence they are of Service in Dysenteries, and an immoderate Flux of the Menfes. The Decoction or Infusion of Pine-tree-tops in Beer, or any other proper Liquor, is supposed to be very effectual for the Stone in the Kidneys or bladder, and for the Scurvy, and other Affections of the Thorax. *Hoffman, Meth. Med.* relates how a thousand Persons were cured of scorbutic Affections, by the young and tender Shoots of the Pine-tree.

Pine-kernels are of a most delicious Taste, and even preferable to Almonds; whence, in *Italy*, they are served in at a second Course: They are moderately hot and moist, maturating, lenitive, and fattening; their principal Use is in a Phthisis and Tabes, because they are very nutritive, though not very easy to be digested, as *Dodonæus* thinks: Taken either alone, or in Honey, or in any other Eclegma, they are good for a Cough, and inveterate Disorders of the Breast, because they are lenitive in Exasperations; they are, also, of Service in nephritic Disorders, the Strangury, Acrimony of Urine, and the like, because they mitigate and remove Pains: They increase Milk, and the Semen; on which Account they revive languishing Nature, and excite to Venery, especially when they are preserved in Sugar. The whole Cone, or Strobilus, boiled with fresh Horehound, and afterwards boiled a second time, with a moderate Addition of Honey, to a melleous Consistence, is a proper Medicine, as *Galen* says, to promote Expectoration, is good for an old Cough, and consumptive Disposition, as we are assured, also, by *Dioscorides*. The Water of the Cone is astringent, and, therefore, good to remove Wrinkles in the Face, to repress the Growth of the Breasts, and for the Falling out of the Matrix, and other Disorders of that Kind.

Cocculus, *κόκκυλος*, according to *Galen*, *Com. 4. in Lib. de R. P. I. A.* though used by *Hippocrates*, was not the Name for the Pine-nut, among the ancient *Greeks*, but *κωνος* (*Conos*); the modern Physicians, he says, almost universally call it *στέβιλος* (*Strobilus*). The *Cocculus*, together with Myrrh, made into an Eclegma with Honey, is advised by *Hippocrates*, in the Book before-mentioned, for a Pleurisy: And in the same Treatise, he directs an Eclegma to be prepared of the *Cocculus* and Galbanum, with *Attic* Honey, for a Peripneumony; to which last Place *Galen* had, undoubtedly, a respect in his Exegesis, where he writes, *That most take the Cocculus to be the Kernel of the Strobilus*. But *Dioscorides*, by way of Diminution, will have it to be the *Granum Cnidium*. *κόκκυλος*, in *Hesychius*, is expounded by *ῥόμβος* (*Rhombus*) *στέβιλος* (*Strobilus*), and *πεύκη* (*Peuce*). Pine-kernels are called by *Dioscorides*, *Lib. 1. Cap. 88.* *πίτιδες* (*Pityides*); by *Menesithus*, in *Athenæus*, *Lib. 2.* *ἀστροειδές* (*Astracides*); also, *πίτινις κωνος* (*pityini Coni*), and *πίτινα κάρυα* (*pityina Caryæ*), from *Alexander Myndius*, and *Diocles Carystius*. *Poesius*.

2. Pinus; sylvestris. *Ger.* 1175. *Emac.* 1356. *C. B. P.* 491. *Rai Hist.* 2. 1399. *Boerb. Ind. A.* 2. 179. *Pinus sylvestris*, *Pinaster*. *Offic.* *Pinus sylvestris vulgaris Germanensis* & *Teda*. *J. B.* 1. 253. THE MOUNTAIN PINE.

This Tree grows to be as tall, and as large, as the former; but differs from it, in having shorter and slenderer Leaves, smaller and sharper Cones, including smaller Kernels, much of the Nature and Virtue of the former: It grows in great Plenty in divers Parts of *Germany*.

From this Tree is gotten what is called *common Turpentine*, (See *TEREBINTHINA*) which is whitish, thick, and opaque, like Honey, of a strong Smell, and used principally by *Farriers*: From this is distilled the Oil of Turpentine, the finer and more volatile Part thereof, and what comes first, being called the

the Spirit: What is left at the Bottom of the Still is the common Rosin, which, if taken out, before it be drawn too high, and then washed in Water by a peculiar Method, is what we call white, or yellow Rosin. The black Rosin is the same, more evaporated, and not washed at all. See COLOPHONIA. The common Frankincense is reputed to be the native Rosin of this Tree, or the *Resina Pini*, which is of a whitish-yellow Colour, whereof some Pieces are fat, soft, and whitish, and others hard, brittle, and more yellow. There is but little of this to be got pure at present, being adulterated by common yellow Rosin, by some way that crafty Knaves have found out. See THUS. The black and yellow Rosin are much of a Nature, being used in Ointments and Plaisters. Mr. Dale, in the second Part of his *Pharmacologia*, affirms, from Dr. Kreig, that the *Pix Burgundica*, or Burgundy Pitch of the Shops, is made of this Turpentine, after it has been boiled some time, and before it has arrived to the Hardness of Rosin: This is done, says he, in Saxony, where the white Rosin is made by boiling the Turpentine in large Vessels, without Distillation. See *Pix Burgundica*. *Miller's Bot. Off.*

3. *Pinus humilis*; *Iulo purpurascens*. T. 585. *Pinaster Austriacus, tenuifolius*. J. B. 1. 255.

The Kernels, dried by the Fire, are good for an Asthma, and deterge Ulcers in the Kidneys. The Decoction of the thin Leaves is commended in the Scurvy, where the Acrimony of the Humours requires Demulcents, and where the Vessels are to be strengthened, as the Case is in a Phthisis. The expressed Oil of the Kernels has the same Virtues, as Oil of Almonds. *Hist. Plant. adscript. Boerhaav.*

PINUS AFRICANA. A Name for the *Conocarpodendron*; *foliis argenteis, sericeis, latissimis*.

Besides the foregoing Species of *Pinus*, Dale mentions the following;

Pinus maritima. Offic. *Pinus sylvestris montana*. Ger. 1175. Emac. 1357. *Pinus maritima major*. C. B. P. 492. *Pinus sylvestris maritima, conis firmiter ramis adhaerentibus*. J. B. 1. 243. Tourn. Inst. 586. Raii Hist. 2. 1400. *Pinus maritima major fructifera*. Park. Theat. 1535. SEA PINE.

It grows in Provence and Languedoc in France; and the Bark, Leaves, and Resin, which are the Parts in Use, agree in Virtues with those of the *Pinus sylvestris*, or Mountain Pine.

Besides these, the following Species are mentioned in Ray;

1. *Pinus cui Officula fragili Putamine sive Cembra*. J. B. *Pinus sylvestris montana tertia*. C. B. *Pinus sylv. altera fructifera, Tæda arbor forte*. Pin. syl. 2. Ger. descr.

It grows plentifully in the Country of the Grisons, where the Peasants feed on the Fruit, which, though, in the Judgment of Bellonius, it has a softer, and more savoury Kernel, than the common Pine, it is yet so cheap, as not to be worth the Exportation; it grows frequently, also, on the Mountains of Geneva, and Mount Cenis, in the Passage from France to the Duchy of Milan, where it is known by the Name of *Elvi*. Gesner says, that it grows on the high Mountains of the Grisons, and of Walliserland; and that no Trees grow in higher Places.

2. *Pinaster latifolius lulis virecentibus aut pallescentibus*. C. B. *Niger, latiore folio, lulis pallescentibus*. Park.

3. *Pinaster Austriacus tenuifolius*. J. B. *Pinaster tenuifolius, Iulo purpurascens*. C. B. *Tæda, seu Pseudo-Pinus*. Ger. *Pinaster 3. Austriacus*. Clus.

4. *Pinaster conis erectis*. C. B. *Pinaster Austriacus*. Ger. Emac. *Pumilus montanus*. Park. *An Pinus sylvestris*. Mughosive Krein. J. B. *Pinus tibulus seu tubulus*. Plin? Sylv. Mugo. Matth.

It grows on the Tops of the highest Alps in Austria and Stiria, among Stones and Rocks, where hardly any other Trees will appear.

5. *Pinaster tertius Hispanicus humilis*. J. B. *Pinus maritima minor*. C. B. Park. *Pinaster marit. minor*. Ger. Emac. Clusius observed this Species only in the Kingdom of Murcia in Spain, and that very rarely.

6. *Pinus sylv. maritima, conis firmiter ramis adhaerentibus*. J. B. Sylv. *altera maritima*. Lob. Obs. *An Pinaster 2. Hispanicus*. Clus.?

7. *Pinus maritima major*. C. B. *Maritima major fructifera*. Park. *Sylvestris montana*. Ger. *Pinus maritima Theophrasti*. Lobelio. J. B. In Trunk, Branches, and Leaves, it appears very like the *Pinaster montanus*; only the Branches are glabrous, and blacker than the Trunk; and the Cone is of a scarlet Colour, and shorter and broader at the Top.

8. *Pinastrum alterum Hispanicum, vel minus Hispanicum*. Clus. *Pinus maritima major fructifera altera*. Park. *Marit. major*. This grows frequently in the Kingdoms of Murcia and Valencia, in Spain.

9. *Pinus sylv. foliis brevibus glaucis, cum parvis albescentibus, Hortulanis nostris*. THE SCOTCH FIR, i. e. *Abies Scotica perperam dicta*. It grows spontaneously in the Stirian Alps.

This is now frequently cultivated in our Gardens and Groves, on account of its noble and beautiful Appearance.

10. *Pinus sylvestris, sive, ut Bellonius, Picea sylvestris Idæ Troadis, cujus coni facile decidunt*. J. B. Raii H. P.

PIPA arbor & fructus sinensis. Michael Boym. in *Flora Sinenfi*. Jonston. Dendrolog. The Name of a Plum-tree, which grows in China.

PIPER ALBUM. Offic. Ger. 1353. Emac. 1538. Park. Theat. 1603. J. B. 2. 181. *Piper rotundum album*. C. B. P. 411. Raii Hist. 2. 1342. *Piper album, Leucopiper*. Mont. Exot. 9. WHITE PEPPER. See *PIPER NIGRUM*.

PIPER NIGRUM. Offic. Ger. 1353. Emac. 1538. Park. Theat. 1603. J. B. 2. 181. *Piper rotundum nigrum*. C. B. P. 411. Raii Hist. 2. 1341. *Lada, aliis Molanga sive Piper aromaticum*. Pil. Mant. A. 492. *Piper rotundum ex Malabara foliis laeis quinque nervis albicantibus*. Herm. Mus. Zeyl. 52. *Molagocodi*. Hort. Mal. 7. 23. Tab. 12. BLACK PEPPER.

The Plant which bears Pepper climbs and twists itself about any thing that is put for its Prop or Support, bearing alternately large, oval, but sharp-pointed Leaves, full of large Nerves, opposite to which grow long Spikes of small monopetalous Flowers, cut into three Parts, succeeded by Bunches of the Grains of Pepper, which are round, of a dark-brown Colour, having a wrinkled Bar on the Outside. There has been a Dispute among the Writers of the *Materia Medica*, whether the white and black Pepper are the Fruit of one and the same Plant, or whether they be two distinct Species. The more ancient, as *Garcias ab Horto*, *Parkinson*, *C. Bauhine*, were of Opinion, that they were different; but *Piso*, in his *Mantissa aromatica*, and since his Time, *Herb. de Jager*, in the twenty-sixth Epistle of the *India literata*, in the Appendix to the *Museum Valentini*, plainly demonstrate, that they are but one Species; and that the white is made of the ripest black Pepper, of which they put a Quantity in a deep Trench, where it lies for two or three Days, till the Bark is rotted, when they pour in a Quantity of Water, and, stirring it about, separate the Bark which swims a-top, and dry the Fruit with white Ashes, which they separate from, when dry, with large Fans, as we with new Corn.

Pepper is heating and drying, expelling Wind, and of great Use against Coldness and Windiness of the Stomach, and the Colic; it strengthens the Nerves and Head, and helps the Sight; outwardly it is good for the Tooth-ach, and for cold Affections of the Nerves, and Pains in the Limbs. Pepper ought not to be powdered fine, but only grossly broken, when it is eaten with any Food, or used to season it. *Miller's Bot. Off.*

Pepper is an aromatic Fruit, of an heating and drying Quality, produc'd in Grains commonly, and us'd in Sauces and Seasonings.

This Fruit, so well known in Europe, is produc'd by a Plant or Shrub, which grows in various Parts of the East Indies.

The Plant which bears it, is weak and creeping; a Circumstance which obliges those who cultivate it to plant it at the Foot of large Trees, such as the *Areca*, and *Coco-nut-tree*. Its Leaves, in Figure, resemble those of Ivy, but are less green, more yellow, of a strong Smell, and pungent Taste.

The Pepper comes forth in small Clusters, like our Gooseberries; and the Grains of which these Clusters are compos'd, at first appear green; then they become red; in proportion as they ripen; and at last black, or such as they come to us, after they are left expos'd to the Heat of the Sun for some time.

There are not two Species of Pepper, one white, and the other black; and we have good Reason to embrace this Opinion notwithstanding what Mr. Pomet, in his *Histoire des Drogues*, has said to the contrary, since Mr. Dillon, a celebrated Physician, and Author of the History of the Inquisition of Goa, assures us, that all the Difference between the white and black Pepper is, that the latter has its Skin, whereas the former wants the Skin; which is taken off by beating it before it is entirely dry, or by suffering it, after it is dry, to soak for some time in Water.

Tho' Pepper is produc'd in various Parts of the Indies, yet it grows most copiously between Rajapour, and the Cape of Camarin. The Pepper of Malabar, or that produc'd between Mount Eli and the Southern Extremity of the Coast, is somewhat smaller than the other; but produc'd in such large Quantities, that Europe is principally supplied with it.

The black Pepper, consumed in Europe, is of three Sorts; that of Malabar, and that of Jamby, and that of Belipatham. But this last is least esteem'd in Europe, on account of its Smallness and Driness; two Circumstances which recommend it to the Indians, who think small Pepper less hot than the large Kind.

The white Pepper ought to be chosen large, well-nourish'd, weighty, and without Mixture of black Grains or Rubbish; which when reduc'd to a Powder, is of a beautiful grey or a whitish Colour.

P I P

As for black Pepper, which ought to be possess'd of almost all the Qualities of the white already enumerated, we must, also, take care that the Grains be not wrinkled; that there be a large Quantity of white Grains among them; and that the largest Grains have not been separated, in order to be whiten'd, a Practice very common in *Holland, Rouen, and Paris*.

As a great Part of the Pepper, whether white or black, is sold beaten, it is easy for Persons of a fraudulent Disposition to sophisticate it, which Retailers generally do by mixing, with the black Pepper, the grey Spices of *Auvergne*; *Maniguette*, a Species of *African* Pepper; the Dust of Pepper; and the Crust of Bread. With the white Pepper they mix white Spices, or black Pepper whiten'd; so that it is very difficult to distinguish the sophisticated from the genuine Kind; for which Reason we ought to buy from Persons of Honesty and Skill.

Druggists and Spice merchants sell various other Kinds of Pepper, describ'd by Travellers in their Relations; such as the Pepper of *Madagascar*, that of *Mascarene*, or the Island of *Bourbon*; the Pepper of *China*; the Long-pepper of the *Indies*, *Ethiopia*, and *America*; *Guinea* Pepper, *Jamaica* Pepper, the Pepper of *Thevet*, and that of *Africa*.

The Pepper of *Madagascar* is white, and grows on a Plant, which creeps on the Ground, and whose Stalk and Leaves have the same Smell with the Fruit, which ripens in the Months of *August, September, and October*.

The Pepper of *Mascarene*, which is, also, produc'd in the Island of *Java*, is call'd Cubebs, or Pepper with a Tail. It exactly resembles the black Pepper, except that it is larger, and has a Tail. The Plant which produces it, creeps on the Ground; and its Fruit, which ought to be chosen large, well nourish'd, and without Wrinkles, adheres to it in the Form of Clusters.

The *China* Pepper, describ'd by Father *le Compte* in his Memoirs, has the same Proportion with that of the *Indies*. The Tree which produces it, is as large as a Nut-tree. Its Fruit is as large as a Pea, and of a greyish Colour, mix'd with red Streaks. When it is ripe, it opens spontaneously, and contains a small Nut, as black as Jet; after it is gather'd, it is expos'd to the Sun, in order to be dried. The Nut, which is of a very strong Taste, is thrown away, and the Husk or Bark only kept. The Smell of the Pepper-tree is so strong, that the Fruit must be gather'd at different Times, lest those employ'd in that Work should be injur'd by it.

The Long-pepper, which is a kind of Congeries of many small Grains, strongly united to each other, grows upon a Shrub, whose Leaves are slender, green, and placed upon a short Stalk.

This Pepper is of three kinds, that of the *East Indies*, that of *America*, and that of *Ethiopia*, which is call'd Grains of *Zelim*. But that of the *Indies* is the only true Long-pepper, since the others bear but little Resemblance to it.

Good Long-pepper ought to be recent, well-nourish'd, large, weighy, difficult to be broken, not rotten, without Rubbish or a Mixture of Earth. It is us'd in Medicine, in various *Galenical* Compositions, and is an Ingredient in the *Theriaca*. It is, also, sometimes mixed with Spices.

The *Guinea* Pepper is of a red Colour, resembling that of Coral. It is cultivated in *Languedoc*, and especially in the Villages about *Nimes*. It is commonly found in the Shops of the Druggists and Grocers. The Vinegar-makers use it for making their Vinegar. Some, also, preserve it with Sugar; it ought to be chosen recent, in Pods, which are beautiful, dry, sound, and very red.

There are four Sorts of this Pepper: The first is call'd *Chilchotes*; the second, which is very small, is call'd *Chiltepín*; and these two Kinds are of an acrid and highly pungent Taste. The third is call'd *Tenachiles*, which is moderately hot, and which the *Indians* eat, like other Fruit, with Bread. The fourth is call'd *Chilpelagua*: This last is neither so pungent as the two first, nor so mild as the third; this is the Species so much esteem'd by the *Spaniards*, and generally us'd by them in preparing their Chocolate.

There is, also, another Species of this Pepper, which only grows about *Peru*, where it is call'd *Azy*. A large Quantity of this Species is cultivated in a small Plain, about six Leagues in Circumference, near the Village of *Arica*, on the Coast of *Peru*, and in the Valleys of *Sama*, *Tacna*, and *Cocumba*. Tho' these four Places are of a small Extent, and there is a great Demand for this Kind of Pepper, yet they furnish every Year, as much as draws more than six hundred thousand Piasters; which would appear incredible, if the Excrements of the Bird call'd *Guana*, with which the *Peruvians* dung their Land, did not render it so fertile, that the Grains sown in it, and especially the *Azy*, yield four or five hundred for one.

The *Jamaica* Pepper is the Fruit produc'd by the Tree which furnishes us with the *Indian* Wood.

The Pepper of *Thevet*, which the *Dutch* call *Amomi*, on account of its Resemblance to the *Amomi*, or *Jamaica* Pepper, is a small round Fruit, as large as the white Pepper, a little roundish, and with a Species of small Crown at one of its Ends. It is, also, called the small round Clove, because its Taste resembles that of the true Clove. *Savary. Dict. de Comm.*

P I S

As for the *African* Pepper, which is call'd *Maniguette*, *Mala-guette*, or *Cardamoms*, see the Article *CARDAMOMUM*.

PIPER JAMAICENSE. *Jamaica* Pepper. See *CARYOPHYLLUS*.

PIPER INDICUM. *Guinea* Pepper. See *CAPSICUM*.

PIPER LONGUM. Offic. Ger. 1355. Emac. 1539. Park. Theat. 1604. Ogilb. Chin. 1. 226. J. B. 2. 185. Raii Hist. 2. 1343. *Piper longum orientale*. C. B. P. 412. *Piper longum Pisto-lobia foliis absque pediculis, Maderaspatana*. Pluk. Phytog. Tab. 104. *Pimpilim*. Pil. Mant. A. 182. *Tlatlancuaye sive Piperis longi Species II*. Hern. 126. *Catta-tripali*. Hort. Mal. 7. 27. Tab. 14. *Arbor Piperifera fructu longo*. Jonst. Dendr. 178. *Aca-pati*. Lact. 231. LONG-PEPPER.

This is a long Fruit, somewhat resembling the *Iulus* or Catkin of the *Hazel*, but hard and firm, consisting of several small roundish Grains, set together in a spiral Order, of a brownish Colour, and an hot biting Taste; they grow upon a Plant, which twists and winds itself about any thing, that is in its Way, having large, oblong, round-pointed Leaves, set alternately on the Stalks; and opposite to them grow monopetalous Flowers, divided into five Segments, which are succeeded by this Fruit. It grows in *Java* and *Malabar*, and other Parts of the *East Indies*.

As in Taste, so in Virtue, it imitates the black Pepper; warming and comforting the Stomach, expelling the Wind, and promoting Digestion. It is, likewise, accounted alexipharmic, and is an Ingredient in the *Theriaca Andromachi*. *Miller's Bot. Off.*

PIPERELLA. A Name for the *Marum*; *Hispanicum*; *nigrum*; *flore purpureo*.

PIPERITIS. A Name for the *Lepidium*, Dittander.

PISCATORIS EMPLASTRUM. The Name of a Plaister describ'd in *Aetius, Tetrabiblos*, 4. *Serm.* 3. C. 18.

PISCATORIS MEDICAMENTUM. The Name of a compound Medicine describ'd by *Attunarius*, L. 6. C. 9.

PISO. A Mortar. *Castellus*.

PISONIA. *Fingrigo vulgo*.

The Characters are;

It is male and female in different Plants; the male Flowers consist of a great Number of Stamina, and have no Petals: The female Flowers consist of one Leaf, which is Bell-shaped, and divided at the Top into five Parts; from whose Cup arises the Pointal, which afterwards becomes an oblong, angular, channel'd Fruit, containing oblong Seeds.

Miller mentions two Species.

1. *Pisonia aculeata mas*. *Houft.*

2. *Pisonia aculeata, fructu glutinoso, & racemoso*. *Plum. Nov. Gen.*

These Plants are seminal Variations, which arise from the Seeds of the same Plant, but as they were not distinguished by any of the Botanists, till the late Dr. *Houftoun* observed their Difference; and therefore the different Sexes are here mentioned as separate Plants.

The Name of this Plant was given by Father *Plumier*, in Honour to Dr. *William Piso*, who published a Natural History of *Brasil*. The Name of *Fingrigo* is what the Inhabitants of *Jamaica* know it by.

These Plants are very common in the *Savannahs*, and other low Places, in the Island of *Jamaica*, as, also, in several other Places of the *West Indies*; where it is very troublesome to whoever passes through the Places of their Growth, by fastening themselves by their strong crooked Thorns, to the Cloaths of the Persons; and their Seeds, being glutinous, also, fasten themselves to whatever touches them: So that the Wings of the Ground-doves, and other Birds, are often loaded with the Seeds, so as to prevent their flying; by which means they become an easy Prey.

It rises about ten or twelve Feet high, with a pretty strong Trunk; but the Branches are long and slender, whereby being unable to support themselves, they generally twist about whatever Plants are near them. *Miller's Dictionary*.

PISSANTHOS. The same as *ORRHOPISSA*.

PISSASPHALTOS. See *BITUMEN*.

PISSE. *πίσση*. Pitch.

PISSELEUM, *πισσέλαιον*, (from *πίσση*, Pitch, and *ἔλαιον*, Oil) Oil of Pitch, is prepared of Pitch by Separation of its watry Part, which swims thereon like Whey upon Milk. It is taken off while the Pitch is in boiling, by spreading over it clean Wool, which, as soon as it is thoroughly moisten'd with the ascending Vapour, is wrung into a Vessel; and this is repeated as long as the Pitch is in boiling.

The *Pisselium* is effectual for the same Purposes as Tar. A Cataplasm thereof, prepared with Meal of Barley, restores the Hairs in an Alopecia; Tar has the same Effect; and, besides, cures Scabs and Ulcers in Cattle. *Dioscorides, Lib. 1. Cap. 95.*

PISSELEUM INDICUM. Offic. *Bitumen Barbadense*. Boerh. Chem. *Pix liquida Barbadenfis*, Pharmacopolis. Lond. *Pis Barbados*. Boerh. Thesaur. Pharm. 108. BARBADOES-TAR.

This is brought from the Island, whose Name it bears; where it floats on the Surface of the Water: It is of a blackish-red Colour, of a disagreeable Smell, and of the Consistence of liquid

liquid Pitch. It is possess'd of a sudorific Quality, and is good for Disorders of the Lungs and Stomach. By adding a small Quantity of the Oil of Anise, to this Bitumen, the London Apothecaries prepare a Balsam, which they sell for the *Balsam of Chili*. Dale.

Boerhaave, in his Chymistry, seems to think *Barbadoes Tar* a vegetable Preparation, since, like the *Oleum Terræ* of the *Indies*, it consists of the express'd Oil of Coco-nuts mix'd with medicated Earths.

This, says *Quincy*, seems to be what passes in the Shops by the Name of *Barbadoes Tar*. It has a strong Scent, not unlike the common Tar, and is not very pleasant to the Sight or Taste; but 'tis certainly a good Balsamic, and where the Stomach will dispense with it, will do great Service in some Disorders of the Breast. It is effectual in obstinate tickling Coughs, and sometimes succeeds where more elegant Medicines have failed. Some commend it in Burns, Scalds, and Inflammations; but the regular Practice does not much justify such Use externally. Among the Country-people, it is in great Request for scald'd Heads, which is a Disease troublesome to cure, and often puzzles a good Physician. It is with some, also, a Secret to apply to the Soles of the Feet in Agues, and, also, to the Wrists; and I have known Instances where it has succeeded. That Medicine commonly sold by the Name of Oil of Spike, is nothing but Oil of Turpentine tinged with this Simple. See *PICRONUM COLICA*.

PISSEROS, *πίσσηρος*, from *πίσση*, Pitch, is an Epithet of a Cerate, called by *Hippocrates* *πίσσηρον κηρόν* (*pissere cerotes*), pitchy Cerate, and order'd by him to be apply'd to Ulcers affected with an Inflammation, and as an Anodyne. It was prepared, as *Galen* writes, *Comment. 1. in Lib. de Fract.* of Wax melted with Oil, or Oil of Roses, and dry Pitch. *Hippocrates* sometimes expresses it simply by *πίσσηρον* (*Pissere*), and sometimes with the Addition of *κηρόν* (*Cerotes*), *πίσσηρον κηρόν*.

PISSITES, *πίσσιτις*, Wine of Pitch, is prepared of Tar and Must. The Tar is first to be washed with Sea-water, or Brine, till it becomes white, and the Sea-water runs off pure; after which it is to be washed with sweet Water. Then to eight Congii of Must, put an Ounce or two of this Tar, and suffer it to ferment, and then to settle, after which pour it into Vessels.

This sort of Wine is of an heating Quality, helps Concoction, is absterfve and pectoral; on which account, it is of Efficacy in Pains of the Thorax, Belly, Liver, Spleen, and Uterus, if unattended with a Fever; also, in inveterate Defluxions, and deep Exulcerations. It is, also, good against a Cough, Slowness of Digestion, Inflations, and an Asthma; and is of Service in Luxations, especially if applied in raw Wool [*αίμαρες*]. *Dioscorides*, *Lib. 5. Cap. 48*.

PISSOCEROS, *πίσσοκερος*. The Wax with which Bees line their Hives, and which is the Foundation of their Combs.

PISSOSIS. Pication. See *PICATIO*.

PISTACHIA. A Name for the *Terebinthus*; *Indica*; *Theophrasti*.

PISTATIO, according to *Castellus*, is the covering any Materials, included in a proper Vessel, with Paste, in order to their being bak'd, or boil'd.

PISTILLUM. A Pestle.

PISTOLOCHIA. See *Aristolochia*, and *Serpentaria Virginiana*.

PISUM.

The Characters are

It has a long inflated Pod, full of roundish Seeds; the lower Part of the Stalk is fistulous; the Leaves are some of them, as it were, perforated by the Stalk; the other are pinnated, and end in a Tendril.

Boerhaave mentions twenty-six Species of *Pisum*, none of which have any medicinal Virtues ascrib'd to them at present, that I know of, except the sixth; which is,

Pisum; arvense, fructu albo. *Tourn. Inst.* 394. *Boerb. Ind.* A. 2. 40. *Pisum*. Offic. *Pisum arvense flore candido, fructu rotundo, albo*. C. B. P. 342. *Pisum minus*. Ger. 1045. *Emac.* 1219. *Pisum vulgare parvum album arvense*. J. B. 2. 297. *Raii Hist.* 1. 891. *Pisum sylvestre primum*. Park. *Theat.* 1057. *Raii Synop.* 3. 318. COMMON WHITE PEAS.

Peas are more used in the Kitchen, than in the Shop, being known to every body to have whitish-green Leaves, consisting of two or three Pair of large oval Pinnæ, with Claspers at the Ends; the Stalks are weak, angular, and not able to support themselves. The Flowers are white and papilionaceous; and the Peas, when ripe, round and white: They are planted in Fields and Gardens, flowering in May, and the Fruit is eat in June.

Peas, when green, are a pleasant grateful nourishing Food, but somewhat flatulent and windy, as well as when dry. They are good to sweeten the Blood, and correct salt scorbutic Humours, either eaten raw, or boiled. *Miller's Bot. Off.*

Peas are a Puls much used for Food; the smaller and greener they are, the better is their Taste. They are, also, dried for keeping; but then they have not the Taste they had before.

They produce the greatest Part of their good Effects by the Help of their oily balsamic Parts, which, sheathing up sharp Humours of the Breast; stop Coughs; and, by easily condensing in the Vacuities of the solid Parts, repair and nourish them. The first Porridge, or boiling of Peas, is softening and laxative; because 'tis filled with the more dissoluble Salts of this Pulse; these Salts, irritating and pricking the intestinal Glands, cause them to let pass through their Pores a greater Quantity of serous Matter. Peas contain a viscous and thick Juice, which causes Wind, and produces gross Humours; and, therefore, they are not good for those that are troubled with Gravel. *Lemery on Foods*.

Broth of Peas, not only renders the Body soluble, but, also, procures a more free and copious Evacuation of the Lochia. It is, also, beneficial in nephritic Pains, according to *Simon Paulli*, in his *Quadripartitum Botanicum*. Some, also, with Success, use a Decoction of Peas, in order to cure cutaneous Disorders, and Pimples. *Hoffman. Præst. Remed. Domest.*

PITACIUM. A large Cloth, impregnated, or spread over, with some Medicine, in order to be applied to a Part affected.

PITHA. A Name in *Boerhaave* for the *Cercus*; *scandens*; *minor trigonus*; *articulatus*; *fructu suavissimo*.

PITINE. A Name for the *APHACA*; which see.

PITOMA. The Name of a large Tree, which grows in *Brasil*, bearing a kind of Apple, of an astringent, bitter Taste, but not eatable, and of no Use in Medicine.

PITTONIA.

The Characters are;

It hath a globular bell-shaped Flower, consisting of one Leaf, which is cut into several Segments at the Brim; from whose Cup arises the Pointal, which afterwards becomes a soft spherical Berry full of Juice, inclosing two Seeds, which are, for the most part, oblong.

Miller mentions seven Species, all of which grow in the warmest Parts of *America*, where the first Sort grows to the Height of twelve or fourteen Feet, and divides into many Branches, so as to form a small Tree. The second, fifth, and seventh Sorts grow to the Height of eight or nine Feet, and produce many Branches near their Roots, so as to form thick Bushes. *Miller's Dict.*

PITTOSIS. The same as *PICATIO*.

PITUITA. Phlegm. See *PHLEGMA*.

PITUITARIA GLANDULA. The Pituitary Gland.

PITYIDES, *πυιδες*, a Name for the Fruit, or Kernels, contained in the Cones of the *Pinus*, and *Picea*. These Kernels are of an astringent and somewhat heating Quality, and are good for a Cough, and other Affections incident to the Region of the Thorax, whether taken alone, or with Honey. *Dioscorides*, *L. 1. C. 87*.

PITUINA, *πυτιν*. The Resin of the Pitch-tree.

PITYLISMA. A Species of Exercise mentioned by *Galen*, de *Sanitate tuenda*, *Lib. 2. Cap. 10*. It consisted in walking on Tiptoes, lifting up the Hands above the Head, and moving them swiftly in different Directions.

PITYOCAMPE, *πυτοκαμπη*. A Species of Caterpillar, which is found on the Pitch-tree, and to which *Galen* ascribes the Virtues of *Cantharides*, de *Simpl. Facult.* *L. 11*.

PITYRIASIS. A scurfy Disorder of the Head, Chin, and Eye-brows, called, also, *Porrigo*. See *LEPRA*. From *πυρ*, Bran.

PITYROIDES. An Epithet for a sort of Sediment in the Urine, resembling Bran.

PITYS, *πυς*. The Pine.

PITYUSA. See *TITHYMALUS*.

PIX. Pitch. This is a Species of Gum obtained from the Pine-tree, by making Incisions in it. It receives different Names according to its different Preparations, Colours, and Qualities. When it first flows from the Tree, it is called *Barras*, but is afterwards distinguished into two Sorts, which have different Names: That which is most beautiful and clear, is called *Galipot*; and that which is more full of Fæces, and of a worse Colour, is called *Marbled Barras*. The former of these, or the *Galipot*, serves to make all the different Species of Pitch described in this Article.

The pinguious Pitch, which is, also, called *White Burgundy Pitch*, is *Galipot* melted with Oil of Turpentine. Some, however, assert, that the *Burgundy Pitch* flows naturally from resinous Trees, in the Mountains of *Franche-Comté*.

Resin is, according to some Authors, a Gum discharged from the Turpentine-tree, the Larch-tree, the Mastich-tree, or the Cypress: But the Opinion of others is far more probable, who, from Experience, assert, that it is *Galipot*, boiled to a certain Consistence, and reduced to a Mass of any determinate Weight.

The best Resin comes from *Bayonne* and *Bordeaux*. It ought to be chosen dry, white, free from Water and Sand.

Black Pitch, which is properly that known by the Name of *Pitch*, is only *Galipot*, prepared in a particular manner, by putting

ting into it, when it is quite warm, a certain Quantity of Tar, in order to render it black. There are two Kinds of it, one hard, and another soft, which only differ in this Circumstance.

Mr. *Wheler*, in his *Voyages*, has given another Method of preparing black Pitch, used in the *Levant*, and which is not much different from that given by *Furetiere* in his Dictionary.

He orders us to prepare a Heap of Earth, in which we are to make an Hollow two Ells in Diameter at the Top, but which becomes gradually narrower, as it approaches to the Bottom. This Hollow is to be filled with small Portions of such Branches of the Pine-tree, as contain most Gum, laid above each other, till the Hollow is full. Then the upper Part is to be covered with Fire, which burns to the Bottom: By which means the Pitch is discharged from a small Hole made at the Bottom for that Purpose.

The best black Pitch comes from *Norway* and *Sweden*, to which that made in *France* is by no means comparable.

The Goodness of hard black Pitch consists in being of a shining black Colour, brittle, dry, and forming, as it were, a Rays, when it is broken.

What is called the *Pix Navalis* in Medicine, ought to be the Pitch scraped off from Ships; but 'tis certain, that most Apothecaries use the common black Pitch in its stead.

From the black Pitch there is obtain'd an Oil, which, on account of its singular Virtues, is called the *Baum of Pitch*. *Diction. de Commerce.*

PIX LIQUIDA. Tar.

Dr. *Berkeley*, Bishop of *Cloyne*, having lately published an Account of the Virtues of Tar-water, which has considerably raised the Attention of the Public, I think myself obliged to give a short Abstract of his Book upon this Subject, especially as the Author is a Person well known in the learned World.

In certain Parts of *America*, Tar-water is made by putting a Quart of cold Water to a Quart of Tar, and stirring them well together in a Vessel, which is left standing till the Tar subsides to the Bottom. A Glass of clear Water, being poured off for a Draught, is replaced by the same Quantity of fresh Water, the Vessel being shaken, and left to stand as before. And this is repeated for every Glass, so long as the Tar continues to impregnate the Water sufficiently, which will appear by the Smell and Taste. But as this Method produceth Tar-water of different Degrees of Strength, I chool to make it in the following manner: Pour a Gallon of cold Water on a Quart of Tar, and stir and mix them thoroughly with a Ladle, or flat Stick, for the Space of three or four Minutes; after which, the Vessel must stand eight-and-forty Hours, that the Tar may have time to subside; when the clear Water is to be poured off, and kept for Use; no more being made from the same Tar, which may still serve for common Purposes.

This cold Infusion of Tar hath been used in some of our Colonies, as a Preservative, or Preparative, against the Small-pox; which foreign Practice induced me to try it in my own Neighbourhood, when the Small-pox raged with great Violence. And the Trial fully answered my Expectation; all those within my Knowledge, who took the Tar-water, having either escaped that Distemper, or had it very favourably. In one Family there was a remarkable Instance of seven Children, who came all very well through the Small-pox, except one young Child, which could not be brought to drink Tar-water, as the rest had done.

Several were preserved from taking the Small-pox by the Use of this Liquor; others had it in the mildest manner; and others, that they might become susceptible of the Infection, were obliged to intermit drinking the Tar-water. I have found it may be drank with great Safety and Success for any Length of Time, and this not only before, but, also, during the Distemper. The general Rule for taking it is, to drink about half a Pint Night and Morning on an empty Stomach; which Quantity may be varied, according to the Case and Age of the Patient, provided it be always taken on an empty Stomach, and about two Hours before or after a Meal.

It seemed probable, that a Medicine of such Efficacy, in a Distemper attended with so many purulent Ulcers, might be, also, useful in other Foulnesses of the Blood: Accordingly, I tried it on several Persons infected with cutaneous Eruptions and Ulcers, who were soon relieved, and soon after cured. Encouraged by these Successes, I ventured to advise it in the foulest Distempers, wherein it proved much more successful than Salivations and Wood-drinks had done.

Having tried it in a great Variety of Cases, I found it succeed beyond my Hopes, in a tedious and painful Ulceration of the Bowels, in a consumptive Cough, and (as appeared by expectorated Pus) an Ulcer in the Lungs, in a Pleurisy and Peripneumony. And, when a Person, who for some Years had been subject to erysipelatous Fevers, perceived the usual fore-running Symptoms to come on, I advised her to drink Tar-water, which prevented the Erysipelas.

I never knew any thing so good for the Stomach as Tar-water: It cures Indigestion, and gives a good Appetite. It is an excellent Medicine in an Asthma. It imparts a kindly Warmth, and quick Circulation, to the Juices without heating; and is therefore useful, not only as a Pectoral and Balsamic, but, also, as a powerful and safe Deobstruent in cachectic and hysteric Cases. As it is both healing and diuretic, it is very good for the Gravel. I believe it to be of great Use in a Dropsy, having known it cure a very bad Anasarca in a Person, whose Thirst, though very extraordinary, was in a short time removed by the drinking of Tar-water.

The Usefulness of this Medicine in inflammatory Cases is evident, from what has been already observed. And yet some, perhaps, may suspect, that as the Tar itself is sulphureous, Tar-water must be of an hot inflaming Nature. But it is to be noted, that all Balsamics contain an acid Spirit, which is, in Truth, a volatile Salt. Water is a Menstruum that dissolves all Sorts of Salts, and draws them from their Subjects. Tar, therefore, being a Balsam, its salutary Acid is extracted by Water, which yet is incapable of dissolving its gross resinous Parts, whose proper Menstruum is Spirit of Wine. Therefore, Tar-water, not being impregnated with Resin, may be safely used in inflammatory Cases; and, in fact, it hath been found an admirable Febrifuge, at once the safest Cooler and Cordial.

The volatile Salts, separated by Infusion from Tar, may be supposed to contain its specific Virtues. Mr. *Boyle*, and other later Chymists, are agreed, that fixed Salts are much the same in all Bodies. But it is well known, that volatile Salts greatly differ; and the easier they are separated from the Subject, the more they possess of its specific Qualities. Now the most easy Separation is, by Infusion of Tar in cold Water, which to Smell and Taste shewing itself well impregnated, may be presumed to extract and retain the most pure, volatile, and active Particles of that vegetable Balsam.

Tar was by the Antients esteemed good against Poisons, Ulcers, and the Bites of venomous Creatures; also, for phthical, scrophulous, paralytic, and asthmatic Persons. But the Method of rendering it an inoffensive Medicine, and agreeable to the Stomach, by extracting its Virtues in cold Water, was unknown to them. The Leaves, and tender Tops, of Pine and Fir are, in our Times, used for Diet-drinks, and allowed to be antiscorbutic and diuretic. But the most elaborate Juice, Salt, and Spirit of those Ever-greens, are to be found in Tar, whose Virtues extend not to Animals alone, but, also, to Vegetables. Mr. *Evelyn*, in his Treatise on Forest-trees, observes with Wonder, that Stems of Trees, smeared over with Tar, are preserved thereby from being hurt by the invenom'd Teeth of Goats, and other Injuries, while every other thing of an unctuous Nature is highly prejudicial to them.

It seems that Tar and Turpentine may be had, more or less, from all Sorts of Pines and Firs whatsoever; and that the native Spirits, and essential Salts, of those Vegetables are the same in Turpentine, and common Tar. In Effect, this vulgar Tar, which Cheapness and Plenty may have render'd contemptible, appears to be an excellent Balsam, containing the Virtues of most other Balsams, which it easily imparts to Water, and by that means readily and inoffensively insinuates them into the Habit of the Body.

The resinous Exsudations of Pines and Firs are an important Branch of the Materia Medica, and not only useful in the Prescriptions of Physicians, but have been, also, thought otherwise conducive to Health. *Pliny* tells us, that Wines, in the Time of the old Romans, were medicated with Pitch and Resin; and *Jobynstonus*, in his *Deuthegraphia*, observes, that it is wholesome to walk in Groves of Pine-trees, which impregnate the Air with balsamic Particles. That all Turpentine and Resins are good for the Lungs, against Gravel, also, and Obstructions, is no Secret. And that the medicinal Properties of those Drugs are found in Tar-water, without heating the Blood, or disordering the Stomach, is confirmed by Experience; and, particularly, that phthical and asthmatic Persons receive speedy and great Relief from the Use of it.

Balsams, as all unctuous and oily Medicines, create a Nauseating in the Stomach. They cannot, therefore, be taken in Substance, so much, or so long, as to produce all those salutary Effects, which, if thoroughly mixed with the Blood and Juices, they would be capable of producing. It must, therefore, be a thing of great Benefit to be able to introduce any requisite Quantity of their volatile Parts into the finest Duets and Capillary Vessels, so as not to offend the Stomach; but, on the contrary, to comfort and strengthen it in a great Degree.

According to *Pliny*, liquid Pitch, (as he calls it) or Tar, was obtained by setting Fire to Billets, or old fat Pines or Firs. The first Running was Tar, the latter, or thicker Running, was Pitch. *Theophrastus* is more particular: He tells us, the *Macedonians* made huge Heaps of the cloven Trunks of those Trees, wherein the Billets were placed erect beside each other:

That

That such Heaps or Piles of Wood were sometimes a hundred and eighty Cubits round, and sixty, or even an hundred, high; and that, having covered them with Sods of Earth, to prevent the Flame from bursting forth, (in which Case the Tar was lost) they set on Fire those huge Heaps of Pine or Fir, letting the Tar and Pitch run out in a Chanel.

From the manner of procuring Tar, it plainly appears to be a natural Production, lodged in the Vessels of the Tree, whence it is only freed and let loose (not made) by Burning. If we may believe *Pliny*, the first Running, or Tar, was called *Cedrium*, and was of such Efficacy to preserve from Putrefaction, that in *Egypt* they embalmed dead Bodies with it. And to this he ascribes their Mummies continuing uncorrupted for so many Ages.

Some modern Writers inform us, that Tar flows from the Trunks of Pines and Firs, when they are very old; that Pitch is Tar inspissated; and both are the Oil of the Tree grown thick and black with Age, and the Influence of the Sun. The Trees, like old Men, being unable to perspire, and their secretory Ducts obstructed, they are, as it were, choked and stifled with their own Juice.

The Method used by our Colonies in *America*, for making Pitch and Tar, is, in Effect, the same with that of the ancient *Macedonians*, as appears in the Account given in the Philosophical Transactions. And the Relation of *Leo Africanus*, who describes as an Eye-witness, the making of Tar on Mount *Atlas*, agrees, in Substance, with the Methods used by the *Macedonians* of old, and the People of *New England* at this Day.

Tar, and all Sorts of Exsudations from Ever-greens, are, in a general Acceptation, included under the Name *Resin*. Turpentine is a Resin, and on all hands allowed to have great medicinal Virtues. Tar, and its Infusion, contain these Virtues. Tar-water is extremely pectoral and restorative; and, if I may judge from what Experience I have had, it possesseth the most valuable Qualities ascribed to the several Balsams of *Peru*, of *Tolu*, of *Copivi*, and even to the Balm of *Gilead*; such is its Virtue in Asthmas and Pleurifies, in Obstructions, and ulcerous Erosions, of the inward Parts.

The Folly of Man rateth things by their Scarceness, but Providence has made the most useful things most common. Among liquid oily Substances, which are termed *Balsams*, and valued for medicinal Virtues, Tar may hold its Place as a most valuable Balsam. Its Fragrancy shews, that it is possessed of active Qualities; and its Oiliness, that it is fitted to retain them. This excellent Balsam may be purchased for a Penny a Pound, whereas the Balsam of *Judea*, when most plenty, was sold, on the very Spot that produced it, for double its Weight in Silver, if we may credit *Pliny*. Now, comparing the Virtues I have experienced in Tar, with those I find ascribed to the precious Balm of *Judea*, of *Gilead*, or of *Mecha*, (as it is diversly called) I am of Opinion, that the latter is not a Medicine of more Value or Efficacy than the former.

The medicinal Virtues of Amber are to be found in the balsamic Juices of Pines and Firs. Particularly the Virtues of the most valuable Preparation, I mean Salt of Amber, are in a great Degree answered by Tar-water, as a Detergent, Diaphoretic, and Diuretic.

It is remarked both by *Theophrastus* and *Johnstonus*, that Trees growing in low and shady Places, do not yield so good Tar, as those which grow in higher and more exposed Situations. And *Theophrastus* further observes, that the Inhabitants of Mount *Ida* in *Asia*, who distinguish the *Idæan* Pine from the Maritime, affirm, that the Tar flowing from the former is in greater Plenty, as well as more fragrant, than the other. Hence it should seem, the Pines and Firs in the Mountains of *Scotland* might be employed in that way, and rendered valuable; even where the Timber, by its Remoteness from Water-carriage, is of small Value. What we call *Scotch Fir*, is falsely so called, being, in Truth, a wild Forest-pine; and, as Mr. *Ray* informs us, agreeing much with the Description of a Pine growing on Mount *Olympus* in *Phrygia*, probably the only Place where it is found out of these Islands; in which, of late Years, it is so much planted and cultivated with so little Advantage, while the Cedar of *Lebanon* might, perhaps, be raised with little more Trouble, and much more Profit and Ornament.

At present the *Norwegian* Tar is the most liquid, and best for medicinal Uses, of any I have experienced. Those Trees that grow on Mountains exposed to the Sun, or the North Wind, are reckoned by *Theophrastus*, to produce the best and purest Tar: And the *Idæan* Pines were distinguished from those growing on the Plain, as yielding a thinner, sweeter, and better scented Tar; all which Differences, I think, I have observed between the Tar that comes from *Norway*, and that which comes from low and swampy Counties.

The less Violence is used to Nature, the better its Produce. The Juice of Olives and Grapes, issuing by the lightest Pressure, is best. Resins, that drop from the Branches spontane-

ously, or ouse from the Trees upon the slightest Incision, are the finest, and most fragrant. And Infusions are observed to act more strongly than Decoctions of Plants; the more subtile and volatile Salts and Spirits, which might be lost or corrupted by the latter, being obtained in their natural State by the former. It is, also, observed, that the finest, purest, and most volatile Part is that which first ascends in Distillation. And, indeed, it should seem the lightest and most active Particles required least Force to disengage them from the Subject.

The Salts, therefore, and more active Spirits, of the Tar are got by Infusion in cold Water; but the resinous Part is not to be dissolved thereby. Hence the Prejudice, which some, perhaps, may entertain against Tar-water, as a Medicine, the Use whereof might inflame the Blood by its Sulphur and Resin, appears not well grounded; it being, indeed, impregnated with a fine acid Spirit, which is balsamic, diuretic, and possessed of many other Virtues. Spirits are supposed to consist of Salts and Phlegm, and probably too somewhat of a fine oily Nature, differing from Oil, because it mixeth with Water; and agreeing with Oil in this, that it runneth in Rivulets by Distillation. Thus much is allowed, that the Water, Earth, and fixed Salt, are the same in all Plants: That, therefore, which differenceth a Plant, or makes it what it is, the native Spark, or Form, in the Language of Chymists and Schools, is none of these things; nor yet the finest Oil, which seemeth only its Receptacle or Vehicle. It is observed by Chymists, that all Sorts of balsamic Wood afford an acid Spirit, which is the volatile oily Salt of the Vegetable. Herein are chiefly contained their medicinal Virtues, and by the Trials I have made it appear, that the acid Spirit in Tar-water possesseth the Virtues, in an eminent Degree, of that of *Gualacum*, and other medicinal Woods.

Qualities, in a Degree too strong for human Nature to subdue and assimilate to itself, must hurt the Constitution. All Acids, therefore, may not be useful or innocent. But this seems an Acid so thoroughly concocted, so gentle, mild, temperate, and withal possessed of a Spirit so fine and volatile, as readily to enter the smallest Vessels, and be assimilated with the utmost Ease.

If any one were minded to dissolve some of the Resin, together with the Salt or Spirit, he need only mix some Spirit of Wine with the Water. But such an entire Solution of Resins and Gums as to qualify them for entering and pervading the Animal System, like the fine acid Spirit that first flies off from the Subject, is, perhaps, impossible to be obtained. It is an Apophthegm of the Chymists, derived from *Helmont*, that whoever can make Myrrh soluble by the Action and Powers of the human Body, has the Secret of prolonging Life; and *Boerhaave* owns, that there seems to be Truth in this, from its resisting Putrefaction. Now this Quality is as remarkable in Tar, with which the Antients embalmed and preserved dead Bodies. And tho' *Boerhaave* himself, and other Chymists before him, have given Methods for making Solutions of Myrrh, yet it is by means of Alcohol, which extracts only the inflammable Parts. And it does not seem, that any Solution of Myrrh is impregnated with its Salt, or acid Spirit. It may not, therefore, seem strange, if this Water should be found more beneficial for procuring Health and long Life, than any Solution of Myrrh whatsoever.

Certainly divers Resins and Gums may have Virtues, and yet not be able for their Grossness to pass the Lacteals, and other finer Vessels, nor yet, perhaps, readily impart those Virtues to a Menstruum, that may with Safety and Speed convey them throughout the human Body: Upon all which Accounts, I believe Tar-water will be found to have singular Advantages. It is observed, that acid Spirits prove the stronger, by how much the greater Degree of Heat is required to raise them. And, indeed, there seems to be no Acid more gentle than this, obtained by the simple Assusion of cold Water, which carries off from the Subject the most light and subtile Parts, and, if one may so speak, the very Flower of its specific Qualities. And here it is to be noted, that the volatile Salt and Spirit of Vegetables, by gently stimulating the Solids, attenuate the Fluids contained in them, and promote Secretions, and that they are penetrating and active, contrary to the general Nature of other Acids.

It is a great Maxim for the Preservation of Health, that the Juices of the Body be kept fluid in a due Proportion. Therefore the acid volatile Spirit in Tar-water, at once attenuating and cooling in a moderate Degree, must greatly conduce to Health, as a mild salutary Deobstruent, quickening the Circulation of the Fluids without injuring the Solids, thereby gently removing or preventing those Obstructions, which are the great and general Cause of most chronic Diseases, and in this manner answering to antihysterical Medicines, such as *Asa-scnda*, *Galbanum*, *Myrrh*, *Amber*, and, in general, to all the Resins and Gums of Trees or Shrubs useful in nervous Cases.

Warm Water is itself a Deobstruent: Therefore the Infusion of Tar, drank warm, is easier insinuated into all the nice Capillary Vessels, and acts not only by virtue of the Balsam, but,

also, by that of the Vehicle. Its Taste, its diuretic Quality, its being so great a Cordial, shew the Activity of this Medicine. And, at the same time that it quickens the sluggish Blood of the Hysterical, its balsamic oily Nature abates the too rapid Motion of the sharp thin Blood in those who are Hætic. There is a Lentor and Smoothness in the Blood of healthy strong People; on the contrary, there is often an Acrimony and Solution in that of weakly Persons. The fine Particles of Tar are not only warm and active; they are, also, balsamic and emollient, softening and enriching the sharp and vapid Blood, and healing the Erosions occasioned thereby in the Blood-vessels and Glands.

Tar-water possesses the stomachic and cardiac Qualities of Elixir Proprietatis, Stoughton's Drops, and many such Tinctures and Extracts; with this Difference, that it worketh its Effect more safely, as it hath nothing of that Spirit of Wine, which, however mixed and disguised, may yet be well accounted a Poison in some Degree.

Such Medicines are supposed to be diaphoretic, which, being of an active and subtle Nature, pass through the whole System, and work their Effect in the finest Capillaries, and perspiratory Ducts, which they gently cleanse and open. Tar-water is extremely well fitted to work by such an insensible Diaphoresis, by the Fineness and Activity of its acid volatile Spirit. And surely those Parts ought to be very fine, which can scour the perspiratory Ducts, under the Scarf-skin, or Cuticle, if it be true, that one Grain of Sand would cover the Mouths of more than an hundred thousand.

Another way wherein Tar-water operates, is by Urine, than which, perhaps, no Method is more safe and effectual for cleansing and carrying off the Salts of the Blood. But it seems to produce its principal Effect as an Alterative, which is sure, easy, and much safer than those vehement purgative, emetic, and salivating Medicines, which do Violence to Nature.

An Obstruction of some Vessels causeth the Blood to move more swiftly in other Vessels which are not obstructed. Hence arise manifold Disorders. A Liquor that dilutes and attenuates, resolves those Concretions which obstruct the Vessels. Tar-water is such a Liquor. It may be said indeed of common Water, that it attenuates; also, of Mercurial Preparations, that they attenuate. But it should be consider'd, that mere Water only distends the Vessels, and thereby weakens their Tone; and that Mercury, by its great Momentum, may justly be suspected of hurting the fine Capillaries; which two Deobstruents, therefore, might easily over-act their Parts, and (by lessening the Force of the elastic Vessels) remotely produce those Concretions they are intended to remove.

Weak and rigid Fibres are looked on by the most able Physicians, as Sources of two different Classes of Distempers; a sluggish Motion of the Liquids occasions weak Fibres, therefore, Tar-water is good to strengthen them, as it gently accelerates the Motion of their Contents. On the other hand, being an unctuous bland Fluid, it moistens and softens the dry and stiff Fibres; and so proves a Remedy for both Extremes.

Common Soaps are Compositions of lixivial Salt and Oil. The corrosive Acrimony of the saline Particles being softened by the Mixture of an unctuous Substance, they insinuate themselves into the small Ducts with less Difficulty and Danger. The Combination of these different Substances makes up a very subtle and active Medicine, fitted for mixing with all Humours, and resolving all Obstructions. Soap, therefore, is justly esteemed a most efficacious Medicine in many Distempers.

Alcaline Salt is allowed to be cleansing, attenuating, opening, resolving, sweetening; it is pectoral, vulnerary, diuretic, and hath other good Qualities, which are, also, to be found in Tar-water. It is granted, that Oil, and acid Salts, combined together, exist in Vegetables; and that, consequently, there are acid Soaps as well as alkaline. And the saponaceous Nature of the acid vegetable Spirits is what renders them so diuretic, sudorific, penetrating, absterfive, and resolving. Such, for Instance, is the acid Spirit of Guaiacum. All these Virtues seem to be in Tar-water in a mild and salutary Degree.

It is the general Opinion, that all Acids coagulate the Blood. Boerhaave excepts Vinegar, which he holds to be a Soap, inasmuch as it is found to contain an Oil as well as an acid Spirit. Hence it is both unctuous and penetrating, a powerful Antiphlogistic, and Preservative against Corruption and Infection. Now, it seems evident, that Tar-water is a Soap as well as Vinegar. For though it be the Characteristic of Resin, which is an inspissated gross Oil, not to dissolve in Water, yet the Salts attract some fine Particles of essential Oil; which fine Oil serves as a Vehicle for the acid Salts, and shews itself in the Colour of the Tar-water; for all pure Salts are colourless. And though the Resin will not dissolve in Water, yet the subtle Oil, in which the vegetable Salts are lodged, may as well mix with Water as Vinegar does, which contains both Oil and Salt. And as the Oil in Tar-water discovers itself to the Eye, so the

acid Salts manifest themselves to the Taste. Tar-water, therefore, is a Soap, and as such, has the medicinal Qualities of Soaps.

It operates more gently, as the acid Salts lose their Acrimony, being sheathed in Oil, and thereby approaching the Nature of neutral Salts, and are more benign and friendly to the Animal System; and more effectually, as by the Help of a volatile, smooth, insinuating Oil, those same Salts are more easily introduced into the Capillary Ducts. Therefore, in Fevers, and epidemical Distempers, it is, (and I have found it so) as well as in chronical Diseases, a most safe and efficacious Medicine, being good against too great Fluidity as a Balsamic, and good against Viscidity as a Soap. There is something in the fiery corrosive Nature of lixivial Salts, which makes alkaline Soap a dangerous Remedy in all Cases where an Inflammation is apprehended. And as Inflammations are often occasioned by Obstructions, it should seem, an acid Soap was much the safer Deobstruent.

Even the best Turpentine, however famous for their vulnerary and detergent Qualities, have yet been observed, by their Warmth, to dispose to inflammatory Tumors. But the acid Spirit, being in so great Proportion in Tar-water, renders it a cooler and safer Medicine. And the ethereal Oil of Turpentine, though an admirable Drier, Healer, and Anodyne, when outwardly applied to Wounds and Ulcers, and not less useful in cleansing the urinary Passages, and healing their Ulcerations, yet is known to be of a Nature so very relaxing, as sometimes to do much Mischief. Tar-water is not attended with the same ill Effects, which I believe are owing, in a great measure, to the ethereal Oil's being deprived of the acid Spirit in Distillation, which, vellicating and contracting as a Stimulus, might have proved a Counterpoise to the excessive lubricating and relaxing Qualities of the Oil.

Woods in Decoctions do not seem to yield so ripe and elaborate a Juice, as that which is deposited in the Cells, or Loculi Terebinthiaci, and spontaneously issues from them. And, indeed, though the Balsam of Peru, obtained by boiling the proper Wood, and scumming the Decoction, be a very valuable Medicine, and of great account in divers Cases, particularly Asthmæ, nephritic Pains, nervous Colics, and Obstructions, yet I verily think, (and I do not say this without Experience) that Tar-water is a more efficacious Remedy in all those Cases, than even that costly Drug.

It has been already observed, that the restorative, pectoral, and antihysterical Virtues of the most precious Balsams and Gums are possessed in an high Degree by Tar-water. And I do not know any Purpose answered by the Wood-drinks, for which Tar-water may not be used, with at least, equal Success. It contains the Virtues even of Guaiacum, which seems the most efficacious of all the Woods, warming and sweetening the Humours, and being diaphoretic, and useful in Gouts, Dropsies, and Rheums, as well as in the Foul Disease. Nor should it seem strange, if the Virtues obtained by boiling an old dry Wood, prove inferior to those extracted from a Balsam.

There is a fine volatile Spirit in the Waters of Geronster, the most esteemed of all the Fountains about Spa, but whose Waters do not bear transporting. The stomachic, cardiac, and diuretic Qualities, of this Fountain somewhat resemble those of Tar-water, which, if I am not greatly mistaken, contains the Virtues of the best chalybeate and sulphureous Waters; with this Difference, that those Waters are liable to affect the Head in taking, which Tar-water is not. Besides, there is a Regimen of Diet to be observed, especially with chalybeate Waters, which I never found necessary with this. Tar-water layeth under no Restraint either as to Diet, Hours, or Employment. A Man may study, use Exercise, or repose, keep his own Hours, pass his Time either within or without, and take wholesome Nourishment of any Kind.

The Use of chalybeate Waters, however excellent for the Nerves and Stomach, is often suspended by Colds, and inflammatory Disorders, in which they are acknowledged to be very dangerous; whereas Tar-water is so far from hurting in those Cases, or deserving to be discontinued on that Account, that it greatly contributes to their Cure.

Cordials, vulgarly so called, act immediately on the Stomach, and, by a Consent of the Nerves, on the Head. But Medicines, of an Operation too fine and light to produce a sensible Effect in the *Primæ Viæ*, may, nevertheless, in their Passage through the Capillaries, operate on the Sides of those small Vessels, in such a manner as to quicken their Oscillations, and consequently the Motion of their Contents, producing, in Effect, all the Benefits of a Cordial much more lasting and salutary than those of fermented Spirits, which, by their caustic and coagulating Qualities, do incomparably more Mischief than Good. Such a cardiac Medicine is Tar-water. The transient Fits of Mirth, produced from fermented Liquors, are attended with proportionable Depressions of Spirit in their Intervals. But the

the calm Cheerfulness arising from this Water of Health (as it may justly be called) is permanent. Tar-water is so far from hurting the Nerves, as common Cordials do, that it is highly useful in Cramps, Spasms of the Viscera, and paralytic Numbness.

Emetics, are on certain Occasions administered with great Success. But the over-straining and weakening of Nature may be very justly apprehended from a Course of Emetics. They are, nevertheless, prescribed and substituted for Exercise. But, in *Plato's Timæus*, Vomits and Purges are said to be the worst Exercise in the World. There is something in the mild Operation of Tar-water, that seems more friendly to the Economy, and forwards the Digestions and Secretions in a way more natural and benign, the Mildness of this Medicine being such, that I have known Children take it for above six Months together, with great Benefit, and without any Inconvenience; and, after long and repeated Experience, I esteem it a most excellent Diet-drink, fitted to all Seasons and Ages.

It is, I think, allowed, that the Origin of the Gout lies in a faulty Digestion. And it is remarked by the ablest Physicians, that the Gout is so difficult to be cur'd, because heating Medicines aggravate its immediate, and cooling its remote Cause. But Tar-water, although it contain active Principles, that strengthen the Digestion beyond any thing I know, and, consequently, must be highly useful, either to prevent or lessen the following Fit, or, by invigorating the Blood, to cast it upon the Extremities, yet it is not of so heating a Nature as to do harm even in the Fit. Nothing is more difficult or disagreeable to Men, than to argue them out of their Prejudices: I shall not, therefore, enter into Controversies on this Subject; but, if them dispute and object, shall leave the Decision to Time and Trial. In the modern Practice, Soap, Opium, and Mercury, bid fairest for universal Medicines. The first of these is highly spoken of. But then those who magnify it most, except against the Use of it in such Cases where the Obstruction is attended with a putrefactive Alkali, or where an inflammatory Disposition appears. It is acknowledged to be very dangerous in a Phthisis, Fever, and some other Cases, in which Tar-water is not only safe, but useful.

Opium, tho' a Medicine of great Extent and Efficacy, yet is frequently known to produce grievous Disorders in hysterical or hypochondriacal Persons, who make a great Part, perhaps the greatest, of those who lead sedentary Lives in these Islands. Besides, upon all Constitutions dangerous Errors may be committed in the Use of Opium.

Mercury has, of late become a Medicine of very general Use; the extreme Minuteness, Mobility, and Momentum of its Parts, rendering it a powerful Cleanser of all Obstructions, even in the most minute Capillaries: But then we should be cautious in the Use of it, if we consider, that the very Thing which gives it Power of doing Good above other Deobstruents, disposes it, also, to do Mischief; I mean its great Momentum: The Weight of it being about ten times that of Blood, and the Momentum being the joint Product of the Weight and Velocity, it must needs operate with great Force. And may it not be justly feared, that so great a Force, entering the minutest Vessels, and breaking the obstructing Matter, might also break or wound the fine tender Coats of those small Vessels, and so bring on the untimely Effects of old Age, producing more, perhaps, and worse Obstructions than those it removed? Similar Consequences may justly be apprehended from other mineral and ponderous Medicines: Therefore, upon the Whole, there will not perhaps be found any Medicine more general in its Use, or more salutary in its Effects, than Tar-water.

To suppose that all Distempers arising from very different, and, it may be, from contrary, Causes, can be cured by one and the same Medicine, must seem chimerical; but it may with Truth be affirmed, that the Virtue of Tar-water extends to a surprising Variety of Cases very distant and unlike. This I have experienced in my Neighbours, my Family, and myself; and as I live in a remote Corner among poor Neighbours, who, for want of a regular Physician, have often recourse to me, I have had frequent Opportunities of Trial, which convince me it is of so just a Temperament as to be an Enemy to all Extremes. I have known it do great good in a cold watry Constitution, as a Cardiac and Stomachic, and at the same time allay Heat, and feverish Thirst, in another. I have known it correct costive Habits in some, and the contrary Habit in others: Nor will this seem incredible, if it be considered, that middle Qualities naturally reduce the extreme; warm Water, for Instance, mixed with hot and cold Waters, will lessen the Heat in that, and the Cold in this.

They who know the great Virtues of common Soap, whose coarse lixivial Salts are the Product of culinary Fire, will not think it incredible, that Virtues of mighty Force and Extent should be found in a fine acid Soap, the Salts and Oil whereof are a most elaborate Product of Nature, and the solar Light.

It is certain Tar-water warms, and therefore some may perhaps still think it cannot cool. The more effectually to remove this Prejudice, let it be farther considered, that, as, on the one hand,

opposite Causes sometimes produce the same Effects, for Instance, Heat by Rarefaction, and Cold by Condensation, both increase the Air's Elasticity; so, on the other hand, the same Cause shall sometimes produce opposite Effects: Heat, for Instance, in one Degree thins, in another coagulates the Blood: It is not therefore strange; that Tar-water should warm one Habit, and cool another; have one good Effect on a cold Constitution, and another good Effect upon an inflamed one; nor, if this be so, that it should cure opposite Disorders; all which justifies to Reason, what I have often found true in Fact. The Salts, the Spirits, and the Heat, of Tar-water are of a Temperature congenial to the Constitution of Man, which receives from it a kindly Warmth, but no inflaming Heat. It was remarkable, that two Children in my Neighbourhood, being in a Course of Tar-water, upon an Intermission of it, never failed to have their Issues inflamed by an Humour much more hot and sharp than at other times. But its great Use in the Small-pox, Pleurisies, and Fevers, is a sufficient Proof, that Tar-water is not of an inflaming Nature.

I have dwelt the longer on this Head, because some Gentlemen of the Faculty have thought fit to declare, that Tar-water must inflame; and that they would never visit any Patient in a Fever, who had been a Drinker of it: But I will venture to affirm, that it is so far from increasing a feverish Inflammation, that it is, on the contrary, a most ready Means to allay and extinguish it. It is of admirable Use in Fevers, being at the same time the surest, safest, and most effectual, Paregoric and Cordial; for the Truth of which I appeal to any Person's Experience, who shall take a large Draught of it Milk-warm in the Paroxysm of a Fever, even when plain Water or Herb Teas shall be found to have little or no Effect. So me it seems, that its singular and surprising Use in Fevers of all Kinds, were there nothing else, would be alone sufficient to recommend it to the Public.

The best Physicians make the Idea of a Fever to consist in a too great Velocity of the Heart's Motion, and too great Resistance at the Capillaries. Tar-water, as it softens and gently stimulates those nice Vessels, helps to propel their Contents, and so contributes to remove the latter Part of the Disorder; and, for the former, the irritating Acrimony, which accelerates the Motion of the Heart, is diluted by watry, corrected by acid, and softened by balsamic Remedies; all which Intentions are answered by this aqueous, acid, balsamic Medicine. Besides, the viscid Juices coagulated by the febrile Heat, are resolved by Tar-water as a Soap, and not too far resolved as it is a gentle acid Soap; to which we may add, that the peccant Humours and Salts are carried off by its diaphoretic and diuretic Qualities.

I found all this confirmed by my own Experience, in the late sickly Season of the Year one thousand seven hundred and forty-one, having had twenty-five Fevers in my own Family cured by this medicinal Water, drank copiously. The same Method was practised on several of my poor Neighbours with equal Success; it suddenly calmed the feverish Anxieties, and seemed by every Glass to refresh, and infuse Life and Spirit into the Patient. At first, some of those Patients have been vomited; but afterwards I found that without Vomiting, Bleeding, Blistering, or any other Evacuation or Medicine whatsoever, very bad Fevers could be cured by the sole drinking of Tar-water Milk-warm, and in proper Quantities, perhaps a large Glass every Hour taken in Bed; and it was remarkable, that such as were cured by this comfortable Cordial, recovered Health and Spirits at once, whilst those who had been cured by Evacuations often languished long, even after the Fever left them, before they could recover of their Medicines, and regain their Strength.

In Peripneumonies and Pleurisies I have observed Tar-water to be excellent, having known some pleuritic Persons cured without Bleeding, by a Blister early applied to the Stitch, and the copious Drinking of Tar-water, four or five Quarts, or even more, in four-and-twenty Hours; and I recommend it to farther Trial, whether, in all Cases of a Pleurisy, one moderate Bleeding, a Blister on the Part affected, and Plenty of tepid Tar-water, may not suffice, without those repeated and immoderate Bleedings, the bad Effects of which are perhaps never got over. I even suspect, that a pleuritic Patient, betaking himself to Bed betimes, and drinking very copiously of Tar-water, may be cured by that alone, without Bleeding, Blistering, or any other Medicine whatever. Certainly I found this succeed by exhibiting a Glass every half-hour.

I have known a Bloody-flux of long Continuance, after various Medicines had been tried in vain, cured by Tar-water; but that which I take to be the most speedy and effectual Remedy in a Bloody-flux, is a Clyster of an Ounce of common brown Resin, dissolved over a Fire in two Ounces of Oil, and added to a Pint of Broth; which not long ago I had frequent Occasion of trying, when that Distemper was epidemical: Nor can I say, that any to whom I advised it, miscarried. This Experiment I was led to make by the Opinion I had of Tar as a Balsamic; and Resin is only Tar inspissated.

Nothing that I know corroborates the Stomach so much as Tar-water: Whence it follows that it must be of singular Use to Persons afflicted with the Gout. And from what I have observed in five or six Instances, I verily believe it the best and safest Medicine either to prevent the Gout, or so to strengthen Nature against the Fit,

Fit, as to drive it from the Vitals. Doctor *Sydenham*, in his Treatise of the Gout, declares, that whoever finds a Medicine the most efficacious for strengthening Digestion, will do more Service in the Cure of that and other chronic Disorders, than he can even form a Notion of; and I leave it to Trial, whether Tar-water be not that Medicine, as I myself am persuaded it is, by all the Experiments I could make. But in all Trials I would recommend Discretion; for Instance, a Man with the Gout in his Stomach ought not to drink cold Tar-water.

It is evident to Sense, that Blood, Urine, and other animal Juices, being let to stand, soon contract a great Acrimony. Juices, therefore, from a bad Digestion, retained and stagnating in the Body, grow sharp and putrid; hence, a fermenting Heat, the immediate Cause of the Gout: The curing this by cooling Medicines, as they would increase the antecedent Cause, must be a vain Attempt. On the other hand, Spices and spirituous Liquors, while they continue to remove the antecedent Cause, or bad Digestion, would, by inflaming the Blood, increase the proximate or immediate Cause of the Gout, the fermenting Heat: The Scope therefore, must be to find a Medicine that shall corroborate, but not inflame. Bitter Herbs are recommended; but they are weak in Comparison of Tar-water.

The great Force of Tar-water to correct the Acrimony of the Blood, appears in nothing more than in the Cure of a Gangrene, from an internal Cause; which was performed on a Servant of my own, by prescribing the copious and constant Use of Tar-water for a few Weeks. From my representing Tar-water as good for so many Things, some perhaps may conclude it is good for Nothing; but Charity obliges me to say what I know, and what I think howsoever it may be taken; Men may censure and object as they please, but I appeal to Time and Experiment. Effects misimputed, Cases wrong told, Circumstances overlooked, perhaps, too, Prejudices and Partialities against Truth, may for a time prevail, and keep her at the Bottom of her Well; from whence, nevertheless, she emergeth sooner or later, and strikes the Eyes of all who do not keep them shut.

Boerhaave thinks a Specific may be found for that peculiar Venom which infects the Blood in the Small-pox, and that the Prospect of so great a public Benefit should stir up Men to search for it. Its wonderful Success in preventing and mitigating that Disorder, would incline one to suspect, that Tar-water is such a Specific. Some think an Erysipelas and the Plague differ only in Degree: If so, Tar-water should be useful in the Plague; for I have known it cure an Erysipelas.

Tar-water, as cleansing, healing, and balsamic, is good in all Disorders of the Urinary Passages, whether obstructed or ulcerated. Doctor *Lifter* supposes, indeed, that Turpentine acts by a caustic Quality, which irritates the Coats of the Urinary Ducts to expel Sand or Gravel. But, it should seem, this expelling diuretic Virtue consisted rather in Salts than the Resin, and consequently resides in the Tar-water gently stimulating by its Salts, without the dangerous Force of a Caustic. The violent Operation of *Ipecacuanha* lies in its Resin, but the saline Extract is a gentle Purge and Diuretic, by the Stimulus of its Salts.

That which acts as a mild Cordial, neither hurting the Capillary Vessels as a Caustic, nor affecting the Nerves, nor coagulating the Juices, must in all Cases be a Friend to Nature, and assist the *Vitæ* in its Struggle against all Kinds of Contagion; and, from what I have observed, Tar-water appears to me an useful Preservative in all epidemical Disorders, and against all other Infection whatsoever, as well as that of the Small-pox. What Effects the Passions of the Mind, have in human Maladies, is well known; and consequently the general Benefit of such a Cardiac cannot be doubted.

As the Body is said to clothe the Soul, so the Nerves may be said to constitute her inner Garment. And as the Soul animates the Whole, what nearly touches the Soul relates to all: Therefore the Asperity of tartarous Salt, and the fiery Acrimony of alkaline Salts, irritating and wounding the Nerves, produce Passions and Anxieties in the Soul, which both aggravate Disorders, and render Mens Lives restless and wretched, even when they are afflicted with no apparent Disorder. This is the latent Spring of much Woe, Spleen, and Uneasiness of Life. Small imperceptible Irritations of the minutest Fibres or Filaments, caused by the pungent Salts of Wines and Sauces, so shake and disturb the Microcosms of high Livers, as often to raise Tempests in Courts and Senates; whereas the gentle Vibrations, that are raised in the Nerves, by a fine subtle Acid, sheathed in a smooth volatile Oil, softly stimulating and bracing the nervous Vessels and Fibres, promotes a due Circulation and Secretion of the animal Juices, and creates a calm, satisfied Sense of Health; and accordingly I have often known Tar-water procure Sleep, and compose the Spirits, in cruel Watchings, occasioned either by Sickness, or by too intense Application of Mind.

In Diseases sometimes Accidents happen from without by Mismanagement, sometimes latent Causes operate within, jointly with the specific Taint, or peculiar Cause of the Malady. The Causes of Disorders are often complicated, and there may be something in the Idiosyncrasy of the Patient that puzzles the Physician. It may, therefore, be presumed, that no Medicine is infallible, not even

in any one Disorder: But as Tar-water possesses the Virtues of fortifying the Stomach, as well as purifying and invigorating the Blood, beyond any Medicine that I know, it may be presumed of great and general Efficacy in all those numerous Illnesses, which take their Rise from foul or vapid Blood, or from a bad Digestion. The Animal Spirits are elaborated from the Blood: Such, therefore, as the Blood is, such will be the Animal Spirits; more or less, weaker or stronger. This shews the Usefulness of Tar-water in all hysteric and hypochondriac Cases; which, together with the Maladies from Indigestion, comprise almost the whole Tribe of chronic Diseases.

The Scurvy may be reckoned in these Climates an universal Malady, as People in general are subject to it, and as it mixes, more or less in almost all Diseases. A Cachexy, or ill-Habit, is much of the same Kind with the Scurvy, proceeds from the same Causes, and is attended with the like Symptoms, which are so manifold and various, that the Scurvy may well be looked upon as a general Cachexy, infecting the whole Habit, and vitiating all the Digestions.

The Cure of the Scurvy is no more to be attempted by strong active Medicines, than Pitch on Silk is to be removed by Force. The viscid Humour must be gently resolved and diluted, the Tone of the Vessels recovered by a moderate Stimulation, and the tender Fibres, and Capillary Vessels, gradually cleared from the concremented Stuff that adheres to and obstructs them; all which is in the properest manner performed by a watry Diluent containing a fine vegetable Soap. And altho' a complete Cure by Alteratives, operating on the small Capillaries, and by insensible Discharges, must require Length of Time; yet the good Effect of this Medicine on cachectic and scorbutic Persons is soon perceived by the Change it produces in their pale discoloured Looks, giving a florid healthy Countenance in less Time than, perhaps, any other Medicine.

It is well known how extremely difficult it is to cure an inveterate Scurvy; how many scorbutic Patients have grown worse by an injudicious Course of Evacuations; and how difficult, tedious and uncertain the Cure is, in the Hands even of the best, who are obliged to use such Variety and Change of Medicines, in the different Stages of that Malady; which, nevertheless, may be cured (if I may judge by what I have experienced) by the sole, regular, constant, and copious Use of Tar-water.

Tar-water moderately inspissates with its balsamic Virtue, and renders mild the thin and sharp Part of the Blood; the same Water, as a soapy Medicine, dissolves the grumous Concretions of the fibrous Part. As a Balsam, it destroys the ulcerous Acrimony of the Humours; and, as a Deobstruent, it opens and cleans the Vessels, restores their Tone, and strengthens the Digestion, whose Defects are the principal Cause of a Scurvy and Cachexy.

In the Cure of the Scurvy, the principal Aim is to subdue the Acrimony of the Blood and Juices. But as this Acrimony proceeds from different Causes, or even opposite, as acid and alkaline, what is good in one Sort of Scurvy proves dangerous, or even mortal, in another. If I may trust what Trials I have been able to make, this Water is good in the several Kinds of Scurvy, acid, alkaline, and muriatic; and I believe the only Medicine that cures them all without doing Hurt in any. As it contains a volatile Acid with a fine volatile Oil, why may not a Medicine cool in one Part, and warm in another, be a Remedy to either Extreme? I have observed it to produce a kindly genial Warmth without Heat, a Thing to be aimed at in all Sorts of Scurvy. Besides, the Balsam in Tar-water sheaths all scorbutic Salts alike; and its great Virtues, as a Digestor and Deobstruent, are of general Use in all scorbutic, and, I may add, in all chronic Cases whatsoever.

I cannot be sure, that I have tried it in a scrophulous Case, tho' I have tried it successfully in one that I suspected to be so. And I apprehend it would be very serviceable in such Disorders. For altho' Doctor *Gibbs*, in his Treatise of the *King's Evil*, derives that Disease from a coagulating Acid, which is, also, agreeable to the Opinion of some other Physicians, and altho' Tar-water contain an Acid, yet, as it is a Soap, it resolves instead of coagulating the Juices of the Body.

For hysteric and hypochondriac Disorders, so frequent among us, it is commonly supposed, that all Acids are bad. But I will venture to except the acid Soap of Tar-water, having found, by my own Experience, and that of many others, that it raises the Spirits, and is an excellent Antihysteric, nor less innocent than powerful; which cannot be said of those others in common Use, that often leave People worse than they found them.

Many hysteric and scorbutic Ailments, many Taints contracted by themselves, or inherited from their Ancestors, afflict the People of Condition in these Islands; which Ailments might be safely removed, or relieved, by the sole Use of Tar-water.

As the Nerves are the Instruments of Sensation, it follows, that Spasms in the Nerves may produce all Symptoms; and, therefore, a Disorder in the nervous System shall imitate all Disorders, and occasion, in Appearance, an Asthma, for Instance, a Pleurisy, or a Fit of the Stone. Now, whatever is good for the Nerves in general, is good against all such Symptoms. But Tar-water, as it includes, in an eminent Degree, the Virtues of warm Gums and Resins, is of great Use for comforting and strengthening the Nerves, curing Twiches in the nervous Fibres, Cramps, also

also, and Numbness of the Limbs, removing Anxieties, and promoting Sleep; in all which Cases I have known it very successful.

This safe and cheap Medicine suits all Circumstances, and all Constitutions, operating easily, curing without disturbing, raising the Spirits without depressing them; a Circumstance that deserves repeated Attention, especially in these Climates, where strong Liquors so fatally and so frequently produce those very Distresses they are designed to remedy; and, if I am not misinformed, even among the Ladies themselves, who are truly much to be pitied. Their Condition of Life makes them a Prey to imaginary Woes, which never fail to grow up in Minds unexercised, and unemployed. To get rid of these, it is said, there are some who betake themselves to distilled Spirits. Thus are many Lives rendered wretched. But the tender Nerves, and low Spirits of such poor Creatures, would be much relieved by the Use of Tar-water, which might prolong and cheer their Lives.

I verily think, there is not any Medicine whatsoever, so effectual to restore a crazy Constitution, and cheer a dreary Mind, or so likely to subvert the gloomy Empire of the Spleen.

It must be owned, that Tar-water is not so violent and sudden a Medicine, as always to produce its Effect at once, (such, by irritating, often do more Mischief than Good) but a safe and mild Alterative, which penetrates the whole System, opens, heals, and strengthens the remote Vessels, alters and propels their Contents, and enters the minutest Capillaries, and cannot, therefore, otherwise, than by degrees, and in time, work a radical Cure in chronic Distempers. It gives, nevertheless, speedy Relief in most Cases; as I have found by myself, and many others. I have been surprised to see Persons fallen away, and languishing under a bad Digestion, after a few Weeks, recover a good Stomach, and with it Flesh and Strength, so as to seem renewed by the drinking of Tar-water. The Strength and Quantity of this Water to be taken by each individual Person, is best determined from Experience. And, as for the Time of taking, I never knew any Evil ensue from its being continued ever so long; but, on the contrary, many and great Advantages, which sometimes would not, perhaps, begin to shew themselves, till it had been taken two or three Months.

Sir John Floyer remarks, that we want a Method for the Use of Turpentine: And again, he who shall hit, says he, on the pleasantest Method of giving Turpentine, will do great Cures in the Gout, Stone, Catarrhs, Dropsies, and cold Scurvies, Rheumatisms, Ulcers, and Obstructions of the Glands. Lastly, he subjoins, that, for the Use of altering and amending the Juices and Fibres, it must be given frequently, and in such small Quantities at a time, and in so commodious a manner, as will agree best with the Stomach, stay longest in the Body, and not purge itself off; for large Doses, says he, go thro' too quick, and, besides, offend the Head. Now the Infusion of Tar, or Turpentine, in cold Water, seems to supply the very Method that was wanted, as it leaves the more unctuous and gross Parts behind, which might offend the Stomach, Intestines, and Head; and, as it may be easily taken, and as often, and in such Quantity, and in such Degree of Strength, as suits the Case of the Patient. Nor should it seem, that the fine Spirit, and volatile Oil, obtained by Infusion of Tar, is inferior to that of Turpentine, to which it superadds the Virtue of Wood-sor, which is known to be very great, with respect to the Head and Nerves; and this appears evident from the manner of obtaining Tar. And as the fine volatile Parts of Tar, or Turpentine, are drawn off by Infusion in cold Water, and easily convey'd throughout the whole System of the human Body; so, it should seem, the same Method may be used with all Sorts of Bissams, or Resins whatsoever, as the readiest, easiest, and most inoffensive, as well as in many Cases the most effectual Way of obtaining and imparting their Virtues.

After having said so much of the Uses of Tar, I must farther add, that, being rubbed on them, it is an excellent Preservative of the Teeth and Gums; that it sweetens the Breath, and that it clears and strengthens the Voice. And as its Effects are various and useful, so there is nothing to be feared from the Operation of an Alterative so mild and friendly to Nature. It was a wise Maxim of certain ancient Philosophers, that Diseases ought not to be irritated by Medicines. But no Medicine disturbs the animal Oeconomy less than this; which, if I may trust my own Experience, never produces any Disorder in a Patient, when rightly taken.

I knew, indeed, a Person who took a large Glass of Tar-water just before Breakfast, which gave him an invincible Nausea and Disgust, altho' he had before received the greatest Benefit from it. But if Tar-water be taken and made in the manner prescribed at the Beginning of this Essay, it will, if I mistake not, have enough of the Salt to be useful, and little enough of the Oil to be inoffensive. I mean my own Manner of making it, and not the *American*. Persons more delicate than ordinary, may render it palatable, by mixing a Drop of the chymical Oil of Nutmegs, or a Spoonful of Mountain-wine, in each Glass. It may not be amiss to observe, that I have known some, whose nice Stomachs could not bear it in the Morning, take it at Night, going to Bed, without any Inconvenience; and that, with some, it agrees best warm, with others cold. It may be made for brute

Beasts, as Horses, in whose Disorders I have found it very useful; I believe, more so, than that bituminous Substance, called *Barbados Tar*.

In very dangerous and acute Cases, much may be taken, and often, as far as the Stomach can bear. But in chronical Cases, about half a Pint, Night and Morning, may suffice; or if so large a Dose should prove disagreeable, half the Quantity may be taken at four times, in the Morning, at Night going to Bed, and about two Hours after Dinner and Breakfast. A Medicine of so great Virtue in so many different Disorders, and especially in that grand Enemy, the Fever, must needs be a Benefit to Mankind in general. There are, nevertheless, three Sorts of People, to whom I would peculiarly recommend it; Sea-faring Persons, Ladies, and Men of studious and sedentary Lives.

To Sailors, and all Sea-faring Persons, who are subject to scorbutic Disorders, and putrid Fevers, especially in long *Southern* Voyages, I am persuaded, this Tar-water would be very beneficial. And this may deserve particular Notice in the present Course of marine Expeditions, when so many of our Countrymen have perished by such Distempers contracted at Sea, and in foreign Climates; which, it is probable, might have been prevented, by the copious Use of Tar-water.

This Water will, also, give charitable Relief to the Ladies, who often want it more than the Parish-Poor; being many of them never able to make a good Meal, and sitting pale, puny, and forbidden, like Ghosts, at their own Table, Victims of Vapours and Indigestion.

Studious Persons, also, pent up in narrow Holes, breathing bad Air, and stooping over their Books, are much to be pitied. As they are debarred the free Use of Air and Exercise, this I will venture to recommend as the best Succedaneum to both. My own sedentary Course of Life had long since thrown me into an ill Habit, attended with many Ailments, particularly a nervous Colic, which rendered my Life a Burden, and the more so, because my Pains were exasperated by Exercise. But, since the Use of Tar-water, I find, tho' not a perfect Recovery from my old and rooted Illness, yet such a gradual Return of Health and Ease, that I esteem my having taken this Medicine, the greatest of all temporal Blessings; and am convinced, that, under Providence, I owe my Life to it.

In the distilling of Turpentine, and other Balsams, by a gentle Heat, it has been observed, that there rises, first, an acid Spirit that will mix with Water; which Spirit, except the Fire be very gentle, is lost. This grateful acid Spirit that first comes over, is highly refrigeratory, diuretic, sudorific, balsamic, or preservative from Putrefaction, excellent in nephritic Cases, and for quenching Thirst; all which Virtues are contained in the cold Infusion, which draws forth from Tar only its fine Flower or Quintessence, if I may so say, or the native vegetable Spirit, together with a little volatile Oil. *Seris*.

PLACENTA. A Cake. In Anatomy, *Placenta* is a Congeries of Blood-vessels, adhering to the Uterus, during Gestation, which, together with the Membranes, and *Fetus Umbilicalis*, is excluded generally after the Fetus. See *SECUNDINÆ*.

PLACENTULA. A Diminutive of the preceding Word.

PLACIANUM COLLYRIUM. The Name of a *Collyrium*, described by *Aetius*, *Tetrabib.* 2. *Secl.* 4. *Cap.* 113.

PLACIUS, πλακίτις. A Species of *CADMIÆ*; which see. It is, also, a Name for a crustaceous Sort of Alum.

PLADAROTES, πλαδαρότης. A Disorder of the Eye-lids, consisting in an Eruption of small, soft, discoloured Tubercles, on their internal Surface.

PLADOS, πλάδος. A redundant and superfluous Humidity, rendering any Part lax and weak.

PLAGULÆ. Compresses, or Bolsters.

PLANETES PYRETOS. An erratic Fever; that is, one which is anomalous, and preserves no regular Period, or Type. The Word is, likewise, apply'd to other Distempers, as the Gout, when irregular.

PLANTIES. The Sole of the Foot.

PLANTÆ. A Plant, or Vegetable. See *BOTANY*. *Planta Nottis* is a minute itching Pustule, which breaks out in the Night. *Castellus*. The Sole of the Foot.

PLANTAGINELLA. A Name for the *Plantago*; *aquatica*; *minima*.

PLANTAGO.

The Characters are;

The Calyx is monophyllous, quadrifid, tubulous, and very tender. The Flower in it is monopetalous, shaped somewhat like a Balon, quadripartite, and expanded in form of a Star: The Ovary is guarded by four long Stamina; whence some take the Flower to be apetalous. The Fruit is a Shell, almost of an oval, or conic Form, when ripe, opening transversely into two Parts (one of which rests upon the other); and is divided by an Inter-closure into two Capsules, full of oblong Seeds.

Boerhaave mentions seventeen Species of *Plantago*; which are,

1. *Plantago*; *lausolia*, *rosea*; *flore expanso*. *C. B. P.* 189. *J. B.* 3. 703.

2. *Plantago*; *latifolia*; *rosea*; *floribus quasi in Spica dispositis*. *C. B. P.* 189. *Plantago, rosea*. *J. B.* 3. 503.

¶ h

3. *Plan-*

P L A

3. *Plantago*; latifolia; sinuata. C. B. P. 189. *Tourn. Inst.* 126. *Boerb. Ind. A.* 2. 100. *Plantago vulgaris*, *Septinervia*. Offic. *Plantago latifolia vulgaris*. Park. Theat. 493. Raii Hist. 1. 876. Synop. 3. 314. *Plantago latifolia*. Ger. 338. Emac. 417. *Plantago major*, folio glabra, non laciniato, ut plurimum. J. B. 3. 502. GREAT PLANTAIN.

The Root of the Plantain is thick at the Head, having many whitish Fibres growing from it. The Leaves are pretty broad, large and oval, somewhat waved about the Edges, and having seven large Nerves running through the whole Length of the Leaves, and even the broad hollow Foot-stalks, into the Root. The Flowers grow in long Spikes, above half the Length of the thick Foot-stalk, being small and staminous, cut into four Parts, which are succeeded by two small oblong shining brown Seeds, hollowed in on the one Side, growing in little roundish Capsulæ, which open horizontally, when the Seed is ripe. It grows everywhere by the Way-side, and flowers in May. The whole Plant is used.

Plantain is cold, dry, and binding, and useful in all Kinds of Fluxes and Hæmorrhages, as spitting and vomiting of Blood, bleeding at the Nose, the Excess of the Catamenia, or Lochia, as, also, for the involuntary making of Urine, its Heat and Sharpness, and the Gonorrhœa. It is, likewise, good to stop the Bleeding of Wounds, and to consolidate their Lips.

The only officinal Preparation is the simple distilled Water. *Miller's Bot. Off.*

Its Leaves are bitter, astringent, and give a faint red Colour to the blue Paper; the Roots give it a deeper, and are only astringent; which shews, that in the Leaves the Sal Ammoniac, and the terrestrial Parts of this Plant, are clogged with a great deal of Sulphur; thus the Plantain is vulnerary, resolving and febrifugous. *Tragus* commends it very much for the Phthisic. In the Country they drink the Juice, from two Ounces to four, at the first Access of the Paroxysm of intermitting Fevers; two Drams of the Extract of this Plant, or a Dram of its Seed, reduced to Powder, cure a Looseness, and all Sorts of Hæmorrhages. The Ptilan and Water of Plantain have the same Virtues. They are prescribed in the Dysentery, spitting of Blood, in the immoderate Flux of the Piles, or Terms, for the Whites, and Losses of Blood. In fine, the Plantain is used in all vulnerary and detensive Potions. In the Inflammation of the Eyes, *Camerarius* made a Collyrium, with the Juice and Leaves of this Plant mixed with Rose-water and Sugar. *Simon Pauli* used the Extract of Plantain, and the Decoction of Sarsaparilla, to cure a young Man that made bloody Urine, after a Gonorrhœa. The Gargarism of Plantain is excellent for the Diseases of the Throat; this Plant is an Ingredient in the Powder which *Julian Paulmier* has prescribed to cure Madness. *Martyr's Tournesfort.*

4. *Plantago*; latifolia; incana. C. B. P. 189. *Tourn. Inst.* 126. *Boerb. Ind. A.* 2. 100. *Plantago incana*. Offic. Ger. 338. Emac. 419. Raii Hist. 1. 877. *Plantago major incana*. Park. Theat. 493. Raii Synop. 3. 314. *Plantago major hirsuta*, media à nonnullis cognominata. J. B. 3. 504. HOARY PLANTAIN.

It grows in gravelly Places, and flowers in June. The Leaves are in Use, and agree in Virtues with those of the Great Plantain, and may be substituted in their stead. *Dale.*

5. *Plantago*; latifolia; hirsuta; minor. C. B. P. 189.

6. *Plantago*; lato, sanguineo folio. H. R. *Monsp.*

7. *Plantago*; latifolia, glabra; pedunculi foliis, &c Spica, longissimis.

8. *Plantago*; latifolia; Spica multiplici, sparsa. C. B. P. 189.

9. *Plantago*; angustifolia; major. C. B. P. 189. *Tourn. Inst.* 127. *Boerb. Ind. A.* 2. 100. *Plantago angustifolia*, *Quinquenervia*. Offic. *Plantago Quinquenervia*. Ger. 341. Emac. 422. Raii Hist. 1. 877. Synop. 3. 314. *Plantago Quinquenervia major*. Park. Theat. 495. *Plantago lanceolata*. J. B. 3. 505. RIB-WORT.

This Plantain has longer and much narrower Leaves than the common Plantain, sharp-pointed, and having five remarkable Ribs, or Nerves, running quite thro' them, to the Root, which is less, and more stringy, than the common Plantain. The Flowers grow at the End of long slender Stalks, in oblong Spikes, about an Inch long; they are small and staminous, with white Apices. The Seed grows like that of the common Plantain, but is somewhat larger. It grows in Fields and Meadows, and flowers in May and June; the Leaves are used.

They are restraining and vulnerary, and may be used to the same Purpose with the common Plantain. Some commend the Juice of it, given before the Fit of an Ague, to prevent its coming. *Miller's Bot. Off.*

Mr. Boyle highly recommends a Dram of the Powder of the Leaves given in the Conserve of red Roses, for a Tertian.

10. *Plantago*; trinervia; folio angustissimo. C. B. P. 189. *Prodr.* 98.

11. *Plantago*; angustifolia; paniculis Lagopi. C. B. P. 189. *Prodr.* 98.

12. *Plantago*; angustifolia; albida; Hispanica. *Tourn. Inst.* 127. *Boerb. Ind. A.* 2. 101. *Holostium*. Offic. *Holostium Salmanticum*. Ger. 342. Emac. 423. Park. Theat. 498. *Holostium bir-*

P L A

sutum albicans majus. C. B. P. 190. *Holostium Plantagini simile*. J. B. 3. 508. Raii Hist. 1. 880. SPANISH PLANTAIN.

This Species grows in sandy Places, and flowers in April and May. It is a vulnerary Plan, and is principally of Use in Hernias.

13. *Plantago*; angustifolia; minima; Massiliensis, Lagopi capitulo. T. 127.

14. *Plantago*; Orientalis; folio Scorzonere. T. Cor. 5.

15. *Plantago*; angustifolia; serrata; Hispanensis. C. B. P. 189.

16. *Plantago*; Cretica; minima; tomentosa; caule adunco. T. Cor. 5. *Holosteum*, seu *Leontopodium*, *Creticum*. C. B. P. 190. *Leontopodium*. Alpin. Exot. 114.

Prosper Alpinus takes this for the *Leontopodium* of *Dioscorides*, and describes it as a small Plant, two Digits in Height; which, from a long slender Root, produces five or seven hairy Leaves, three or four Digits in Length, which, near the Root, are covered with a thick Down. Among the Leaves, near the Root, are little Heads bending downwards from their Stalks, in a wreathed Posture, and bearing black Flowers, which are succeeded by Seeds, involved in so thick a Down, that they can hardly be taken out of it. I have often, says *Prosper Alpinus*, received this Plant dry'd from Candy; and, having produced it from the Seed, found none of its Characters disagreeable with those of the *Leontopodium*. But one thing, he thinks, ought to be observed, which is, what *Dioscorides* has written of the *Catanance*, that when it is dry'd and withered on the Ground, it shrinks and contracts itself into the Figure of the Claws of a dead Kite. Now this Plant *Bellus* plainly proves to be the *Leontopodium*, and not the *Catanance*, since it has neither the Leaves of the *Coronopus*, nor the Seeds of the *Orobis*, which are ascribed to the *Catanance*, but rather of the *Psyllium*. But, I am inclined to believe, he says, that either the *Leontopodium*, and *Catanance*, are the same Plant, or, at least, are not different in Species; and the rather, because *Dioscorides* says of both of them, that they are employ'd as Philtres, or Medicines to procure Love. *Prosper Alpinus de Plantis exoticis.*

17. *Plantago*; angustifolia; major; foliis non dentato, rigidiori, ac radice repente. H. C. Suppl. 3. *Boerb. Ind. alt. Plant. Vol.* 2.

Plantain has an astringent Virtue, without any manifest Acrimony. It is of Service in pissing or spitting of Blood, and under an immoderate Flux of the Lochia; in which Cases it never fails the Hopes of the Physician. Externally, it is of Use in Inflammations, being apply'd to the Parts affected. It is a Plant of excellent Use in a Diarrhœa, Hæmorrhages, and Diseases of the Eyes. The bruised Leaves are good to cleanse and consolidate old Wounds and Ulcers. Their Juice is very proper in intermitting Fevers, and in a Phthisis; the distilled Water, mixed with Rose-water, is a good Remedy for Inflammations of the Eyes; the Water injected is of Service in a Gonorrhœa, and the Decoction of the Leaves makes a proper Gargarism in Diseases of the Fauces. *Hist. Plant. adscript. Boerhaav.*

PLANTAGO AQUATICA.

The Characters are;

The Root is very full of Fibres, which unite in a Bulb; the Leaves are like those of the *Plantago*; the Stalk is erect, and bears something like an Umbella. The End of the Pedicle is unfolded into a monophyllous trisid Calyx, which is first expanded like a Star, and, afterwards, retracted backwards. The Flower is tripetalous, rosaceous; the Perals proceeding from the Margin of the reflexed Calyx; the Stamina are six in Number, two from the Origin of each Petal. The Ovary becomes a Fruit, consisting of a Congeries of Seeds, collected, in the large Species, into a triangular Form; in the lesser, into an echinated, or prickly Ball, each Seed furnished with its proper Tube.

Boerhaave mentions three Species of *Plantago Aquatica*; which are,

1. *Plantago*; aquatica; latifolia. C. B. P. 190. *Boerb. Ind. A.* 45. *Plantago aquatica*. Offic. J. B. 3. 787. Raii Hist. 687. Synop. 3. 257. *Plantago aquatica major*. Ger. Emac. 417. Park. Theat. 1245. *Plantago aquatica major*, *Limonium verum Dioscoridis & Antiquorum*. Phyt. Brit. 94. *Alisma*. Dill. Cat. Giff 126. *Alisma*, *Doronicum Pannonicum*. Mont. Plant. Var. Ind. 36. *Ranunculus palustris Plantaginis folio ampliore*. *Tourn. Inst.* 292. WATER PLANTAIN.

It grows in watry Places, and flowers in June, and the Root is in Use.

Schwenebfield says, that it cures the falling down of the Anus, and mitigates the Redness and Inflammation of the Gout, and the Pain of the Head, proceeding from a cold Cause; and is a Remedy for pissing and spitting of Blood. The Juice, as *Roslin* says, consumes the Milk in the Breasts. *Dale.*

2. *Plantago*; aquatica; angustifolia. C. B. P. 190. *Ranunculus palustris*, *Plantaginis folio angustiori*. T. 292.

3. *Plantago*; aquatica; minima. Clus. H. 110. *Plantaginella palustris*. C. B. P. 190. *Ranunculus aquaticus*, *Plantaginis folio angustissimo*. T. 292. *Boerb. Ind. alt. Plant.*

It is called *Plantago aquatica*, because its Leaves are like those of the *Plantago terrestris*. Many think it the *Damasonium* of the Antients; but what is said of the *Damasonium*, does not seem, to me, to agree with this Kind. As for M. *Vaillant*, he thought it the *Damasonium*, because *Lobel* calls one Species of the *Plantago*

zago by that Name. *Tournefort* refers the whole Kind to the *Ranunculus*, but I know not for what Reason; for their Leaves and Flowers are different.

The Taste shews this to be an acrimonious Plant, tho' the Generality of Botanists, among whom is *Martialis*, say, it is of a cold Quality. But this Error is corrected by *Gesner*, *Baubine*, and others, who make it a Plant of a very heating Nature. The Reason why it was thought to be cold was, I conceive, because the *Plantago* is refrigerating; whence they thought the *Plantago aquatica* to be of the same Nature. The Plant then is acrimonious and penetrating, whatever may have been said of its cooling and drying Qualities. The Leaves bruised, and applied to the Breasts, are a sovereign and approved Secret, as *Timach* assures us, for suddenly consuming and drying up the Milk therein. *Hist. Plant. adscript. Boerhaav.*

PLANTARIS MUSCULUS, or TIBIALIS GRACILIS.

This is a small pyriform Muscle, situated obliquely in the Ham, below the external Condyle of the Os Femoris, between the *Popliteus* and *Gastrocnemius Externus*; and its Tendon, which is long, flat, and very small, runs down on the Side of the *Gastrocnemius Internus*, all the way to the Heel.

The fleshy Body, which is only about two Inches in Length, and one in Breadth, is fixed by a short, flat Tendon, above the outer Edge of the exterior Condyle of the Os Femoris, on one Side of the *Gastrocnemius Externus*. From thence the fleshy Body runs obliquely over the Edge of the *Popliteus*, and terminates in a very small, long, flat Tendon.

This Tendon runs between the Body of the *Gastrocnemius Externus* and *Soleus*, all the way to the inner Edge of the upper Part of the *Tendo Achillis*; and from thence continuing its Course downward, it joins this Tendon, and is inserted together with it, in the Outside of the posterior Part of the Os Calcis, without communicating with the *Aponeurosis Plantaris*.

Sometimes this Muscle is wanting, and sometimes it is situated lower down.

From the Description of the *Tibialis Gracilis*, we see evidently, that it can have no Use with relation to the Sole of the Foot. The Use assigned to it by others, of extending the Tarsus, and thereby assisting the *Gastrocnemii* and *Soleus*, seems to me to be very uncertain; both because of the great Disproportion in its Size, and the Obliquity of its Course. If the *Soleus* were not cover'd by the *Gastrocnemii*, the *Tibialis Gracilis* might be imagined to serve as a *Frænum*, in bracing down that Muscle, and hindering it from swelling too much; but the small Number and Direction of its Fibres would still render it unfit for that Function.

Till its true Use is evidently discover'd by some lucky Observation, there is, in the mean time, some Ground to think, that it hinders the Capsular Ligament of the Knee from being compress'd in the Flexion of that Joint; both because of its Adhesion to that Ligament, and because of the Obliquity of its Course; especially since the neighbouring Portion of the same Ligament seems to receive the same Assistance from a tendinous Expansion of the *Semi-membranosus*. *Winslow's Anatomy.*

PLASTICUS, πλαστικός, from πλασσω, to form. Formative, or endued with a Faculty of forming.

PLATÆ, πλαται. The Scapula.

PLATAMON, πλαταμών. A smooth low Rock, prominent out of the Sea. *Galen, Exeg.*

PLATANARIA. A Name for the *Spartanium*; *ramosum*.

PLATANUS.

The Characters are;

The Leaves are large, and laciniated; the Flower is amentaceous, form'd into a globular Figure, and consisting of a Multitude of Stamina. The Fruit, which is produced at a Distance from the Flower, is spherical, and contains vast Numbers of long, apiculated Seeds, intermix'd with much Down.

Boerhaave mentions two Species of *Platanus*; which are,

1. *Platanus*; *Orientalis*; *verus*. *Park. Theat.* 1427. *Rail Hist.* 2. 1706. *Tourn. Inst.* 590. *Boerb. Ind. A.* 2. 209. *Platanus*. *Offic. C. B. P.* 431. *J. B.* 1. 170. *Ger.* 1304. *Emac.* 1489.

THE PLANE-TREE.

The *Platanus Orientalis*, so much celebrated by *Herodotus*, and other Writers, is, also, called *Platanus latus*, because it extends its Branches to such a Compass, as to be able to cover more than a thousand Men under its pleasing Shade. Under this Tree, *Hippocrates* found *Democritus*, and saluted him. *Hist. Plant. adscript. Boerhaav.*

The tender Leaves of the *Platanus*, boil'd in Wine, and apply'd as a Cataplasma, stop Defluxions upon the Eyes, and give Relief under Tumors and Inflammations. The Bark, boil'd in Vinegar, makes a Collution for the Tooth-ach. The green Balls or Fruit, drank in Wine, cure the Bites of Serpents; and made into an Ointment with Fat, are a Remedy for Ambushions. The Dust, or Down, of the Fruit, or Leaves, falling into the Eyes, or Ears, injures the Sight and Hearing. *Dioscorides, Lib. 1. Cap. 107.*

2. *Platanus*; *Occidentalis*; aut *Virginienfis*. *Park. Theat.* 1427. *Boerb. Ind. alt. Plant.*

PLATANUS is, also, a Name for the *Papaya*; *fructu Meol-peponis effusie.*

PLATEA. The Pelican.

PLATIASMOS, πλατιασμός. A Fault in Pronunciation, when a Person opens his Mouth too wide, which hinders him from speaking distinctly. *Gorræus.*

PLATYCORIA, πλατυκορία. A preternatural Dilatation of the Pupil of the Eye, from a paralytic Cause. *Arctæus de Sig. et Caus. diuturn. L. 1. C. 7.*

PLATYOPHTHALMON. A Name for Antimony; so call'd, because it was used by Women, for rendering their Eyebrows and Eye-lashes black and beautiful.

PLATYPHYLLOS. A Name for the *Quercus*; *latifolia*; *mas*; quæ brevi Pediculo est. And for the *Quercus*, *latifolia*; *femina*.

PLATYSMA, πλάτυσμα. Any thing which is flat, and broad. Thus a Piece of Cloth, or Plaster, or Plate of Metal, are call'd by this Name.

PLATYSMA MYOIDES is the Name by which *Galen* calls the muscular Expansion, call'd *Quadratus Genæ*. See *CAPUT*, and *LABIA*.

PLATYSTERNOS. Broad-chested. An Epithet for a Person possess'd of a broad STERNUM.

PLECHAS, πλεχάς. The Region of the Body, which is terminated on each Side by the Thighs; forward by the *Pudenda*, and backwards by the Anus. *Hippocrates.*

PLECTANE, πλεκτανή, or πλέγμα. A Plexus, or Complication of Vessels. *Plectanæ*, πλεκτάναι, are the Cornua of the Uterus.

PLECTRUM. A Name for the Styloide Process of the Os *Petrosum*; for the *Uvula*; and, in some Authors, for the Tongue.

PLEGMA. The same as PLECTANE.

PLEGMARIA. See SELAGO.

PLEIAS, πλειάς, or πλειάς, in the Plural Number *Pleiades*, in Latin *Vergiliæ*, is a Constellation of seven Stars in the Sign *Taurus*; but, in *Hippocrates*, it signifies the Fall of these Stars, which is at the End of Autumn, or about the latter End of October. This is what *Galen* intimates, *Com. 1. in 1 Epid.* where he says, "that *Hippocrates* plainly shews, that he knew the Fall of the *Pleiades* to be the End of Autumn; which, therefore, by a compendious way of Expression, he calls πλειάς." Thus *Galen*. And in Confirmation of what he says, we may often observe, that *Hippocrates* uses the Words *ὑπὸ πλειάδος*, to signify the End of Autumn.

PLEMMYRIS, πλεμμυρίς, is, properly, the same as πλεμμύρα, and signifies the flowing of the Tide, as *Hesychius* expounds it; but is, by a Metaphor, used to express a Redundance, or Overflowing, of Humidities, or, as *Galen* expounds it, πλῆθος ὑγρότητος, "Plenty of Moisture."

PLEMNE, πλήμνη, is expounded, in *Galen's* Exegesis, by *πρόχῳ χαλινῆς*, "the Nave of a Wheel." The Word frequently occurs, *Lib. de Fract. Plemnæ*, πλήμναι, in the plural Number, as expounded by *Hesychius*, are the Perforations round the Nave, or Axis, into which the Spokes of the Wheel are inserted. *Foesius.*

PLENILIUNUM. The Full Moon. At this Time, many Distempers are said to be exasperated; as Madness, the Epilepsy, and Disorders arising from Worms. See *ASTRONOMIA*.

PLENNA, πλέννα, the same as *BIENNA*, Mucus.

PLERES ARCHONTICON. The Name of a compound cephalic Powder. *Lemery Pharmacopée Universelle. Blancard.*

PLEROSIS, πλήρωσις. Repletion; or a recruiting a Body, worn out, or reduced, by Sickness, or Evacuations.

PLESMONÉ, πλεσμονή. Plenitude, Satiety, or Repletion.

PLETHORA. πλεθώρα, from πλῆθος, Plenitude. A Plenitude, or Redundance of Blood, and Humours.

The Disorders arising from a Defect of the Circulation of the Humours, are, in Nature, pretty much the same with those spontaneously produced by their Stagnation. In this Case the Air is of great Importance, since, when admitted, it accelerates spontaneous Corruptions, which would otherwise be brought on more slowly; so that the Knowledge and Cure of the former, are the same with those of the latter; and from all these, the Nature, Cause, Effects, Signs, and Remedies of a Plethora may be duly understood, provided the following Circumstances are adverted to.

The Fluids of the human Body, are either crude, and, in some measure, partake of the Nature of the Aliments; or they have acquired those Qualities which are peculiar to the human Fluids: Now, if we consider what happens both to the crude and assimilated Fluids of the human Body, whilst the Circulation is diminished, it will evidently appear, that nearly the same Changes will happen to the Fluids, as if they had been left to themselves, and in a State of Rest; for the human Blood, when suffered to rest for a few Moments, is separated into Serum, and a red coagulated Substance. Now, when the Circulation is considerably diminished, a Misfortune of the like Nature, of course, begins to be formed; and hence it is, that polypose Concretions are so frequently observed after chronical Disorders. But all crud-
Aliments

ments are, by the Efficacy of the Circulation of the Blood, assimilated to the human Fluids. Now if the Circulation of the Humours is diminished, the Aliments longer retain their original Quality, and are spontaneously corrupted.

It must be observed, that a free Access of the Air accelerates all spontaneous Degenerations of the Humours; for no Fermentation happens without the Approach of the Air, and whilst the Atmosphere is excluded, a Putrefaction of the Humours is far more slowly formed, than it would otherwise be. Thus, in dropical Patients, stagnant Water often remains for some Months in the Abdomen, with scarce any Degree of Corruption; but it soon becomes putrid upon the Access of the Air.

Whilst, during the last Months of Gestation, the Blood becomes almost stagnant in the distended Vessels of the Uterus, it does not become corrupted; but, after Delivery, upon the Approach of the Air, the Lochia are highly fetid. After violent Contusions, when the Blood remains under the sound Skin, it hardly becomes putrid; but, being gradually attenuated and absorbed, as it were, disappears. But when Blood taken from the Veins is exposed to the free Air, it quickly becomes putrid. Hence, whilst, in the interior Parts of the Body, the Humours either become stagnant, or move slowly, they do not suddenly degenerate into a putrid State, when the Air has not a free Access to them.

But as a Plethora, or increased Quantity of Fluids, retards their Circulation, so its Nature, Causes, Signs, and proper Remedies, are to be deduced from the following Considerations:

A Plethora is a larger Quantity of laudable Blood, than is capable of undergoing those Changes, which must necessarily happen for the Purposes of Life, without inducing Diseases.

A Redundance of laudable Blood is what we call a Plethora: Hence this Circumstance can never, in its own Nature, be a Disorder; since it only supposes a preternatural Quantity of laudable Humours, whilst, in every other respect, the Patient is sound. Hence *Helmunt* imagined, that a Plethora was unjustly classed among the Number of Diseases, since, according to him, what is laudable, cannot be peccant in Quantity. Now a Plethoric Patient is such an one, as is not as yet sick, but at the same time is in such a State of Plenitude, that, if the Humours are more increased or rarefied by Heat, or any other Cause, the natural Functions are, by these means, injured. Hence a Plethoric Person may be sound, though at the same time in the greatest Danger; for, by an increased Heat of the circumambient Atmosphere, the smallest Error with respect to the Non-naturals, or any violent Passion of the Mind, this sound State may be changed into the most dangerous Disease. But it is impossible to prevent such a Misfortune sometimes happening to the most healthy Person. Hence *Hippocrates*, in *Aphor. 3. Sect. 1.* informs us, "That Persons in a good Habit of Body are in a State of Danger; and that, since they cannot long continue in the same State, nor change for a better, they must, of course, decline into a worse; for which Reason such a State ought, with the greatest Expedition, to be removed."

A Plethora, therefore, does not import every Increase of the Humours, but only an Augmentation of the laudable Juices. Hence *Galen*, in *Method. Medend. Lib. 13. Cap. 6.* informs us, "That a mutual and equable Increase of the Fluids is called a Plethora; whereas, when the Body abounds with yellow or black Bile, Phlegm, or serous Humours, the Disorder is called a *Cachexia*, and not a Plethora."

A Plethora was, by the Antients, distinguished into that affecting the Vessels, and that influencing the Strength. When the Vessels are so preternaturally turgid with the laudable Juices, that they are ready to break, the Misfortune is called simply a *Plenitude*, or *Plethora of the Vessels*. But when the Vessels are not too full of laudable Humours, but yet contain more than the weak vital Force is able to put into a due Circulation, the Disorder is called a *Plenitude*, or *Plethora, with respect to the Strength*. Thus *Galen*, in his *Treatise de Plenitudine*, *Cap. 3.* informs us, "That there are two Species of Plethoras, one affecting the Strength and vital Powers; and the other the Vessels." And in his *Treatise de Curandi Ratione per Evacuationem*, *Cap. 6.* he tells us, "That the more heavy a Person perceives himself, the more a Plethora, with respect to the Strength, is increased; whereas a Plethora, with respect to the Vessels, is discovered by a Sense of Tension."

But a Plethora, in the common Acceptation of the Word, is confined to the Vessels, and in this Sense we now consider it.

This Species of Plethora, then, is generated by every Cause which produces a large Quantity of laudable Chyle and Blood, and at the same time hinders their Attenuation, Consumption, and Perspiration.

By the Functions of Life, the Solids are necessarily worn,

and the Fluids dissipated. Hence what is lost, ought to be recruited by Aliments. If every Day as much is restored to the Body as is lost, there remains a perfect Equilibrium, the most perfect Sign of confirmed Health; for *Sanctorius* has shewn, by his Experiments, that the Body is in the most perfect State of Health, when daily, after the Digestion of the Aliments, it returns to its usual Weight. Now the Restitution of what is lost, is produced by laudable Chyle, and the Blood formed of it. If, therefore, by whatever Cause, there is a larger Quantity of laudable Chyle and Blood, than is sufficient for restoring what is lost, generated, there will be an Accumulation of superfluous Juices gradually produced, and such an Accumulation will be greatly increased, if the Efficacy of those Functions is diminished, by which the Fluids ought to be attenuated, consumed, and dissipated, by the usual Ways of Excretion.

Among the other Causes of a Plethora, we may justly reckon the great contractile Force of the chylopoetic Organs, Heart, and Arteries; a lax Texture of the Veins, and other small Vessels; mild Aliments, easily convertible into Chyle; much Sleep; an easy Mind; a Want of due muscular Motion, and habitual Evacuations of Blood, whether natural or artificial.

As for the contractile Force of the chylopoetic Organs; whilst the Viscera, subservient to the Change of the Aliments into laudable Chyle, are sound and strong, there is a large Quantity of Chyle prepared from the Food and Drink; and whilst the like Strength remains in the Heart and Arteries, a laudable Blood is generated from this large Quantity of Chyle; whilst at the same time the Veins, being naturally lax, easily yield to the distending Fluid, and receive its superfluous Quantity, unless a Depletion of them is produced by proportionably greater Motion and Exercise; for the more languid the Circulation is, the more Humours are accumulated in the Veins: Whereas, on the contrary, the brisker the Motion of the Blood is, the Arteries become the fuller, and the Veins the more empty: Whilst Drunkards often destroy large Quantities of Liquor, they would be suffocated, unless the Veins were capable of receiving the superfluous Liquor; for which Reason their Veins are, at such times, greatly inflated. When, therefore, the chylopoetic Organs prepare a large Quantity of Chyle; when the Viscera, subservient to Sanguification, convert this Chyle into Blood, and there is, at the same time, a Laxity of the Veins, there must necessarily be a Redundance of laudable Blood accumulated.

As for mild Aliments; all acrid Substances, by their stimulating Quality, increase the Circulation of the Blood; and an increased Motion of the Blood diminishes the Quantity of the Juices: Mild Aliments, therefore, of the ripe, farinaceous kind, Broths prepared of Flesh, the tender Fleashes of young Animals, and soft Pot-herbs, from all which a large Quantity of laudable Chyle is generated, have a Tendency to produce a Plethora.

As for much Sleep; it is shewn, under the Article *FIBRA*, how plentiful Sleep conduces to the Relaxations of too rigid Fibres. Now the relaxed Vessels easily yield to the distending Fluids, for which Reason they are the more filled. Besides, during Sleep, what was lost by the Functions of Sensation, and voluntary Motion, is restored. On the contrary, whilst we are awake, what was accumulated during Sleep, is consumed. Hence those, who are fatigued by the Labours of the Day, rise brisk and vigorous, after a salutary Sleep. When, therefore, any Person indulges himself in a great deal of Sleep, the more the Humours are daily accumulated, and the less of them is dissipated. Hence arises a Plethora. Hence, also, it is, that Habits exhausted by violent Disorders are so happily restored by long Sleep; and Bears sustain Life all the Winter by sleeping, without any manner of Food.

As for an easy Mind; that Serenity of Mind contributes greatly to the Preservation of Life, is sufficiently obvious. Now the Effect of the best Health is a Plethora: Besides, violent Passions, and racking Cares, palpably prey on the Body. And *Galen*, in his *Method. Medend. Lib. 14. Cap. 15.* mentions the Cares of the Mind, among the other Methods of curing Obesity or Fatness.

As for a Want of due muscular Motion; after Man, for the Punishment of his Sin, was sentenced to earn his Bread by the Sweat of his Brow, bodily Exercise became necessary for the Preservation of Health: Accordingly Persons, who led delicate and idle Lives, are afflicted with the most terrible Disorders. *Hippocrates*, in his *Treatise de Vitiis Ratione Sanorum, Lib. 1.* informs us, "That a Person, who eats heartily, cannot be found, without Exercise; for though Aliments and Exercise have different Effects, yet they mutually concur to the Preservation of Health; since Labour consumes what is superfluous, whilst Aliments and Drink recruit what is lost." And in the same *Treatise, Lib. 3.* he orders us to consider, "Whe-

“ whether the Aliments surpass the Exercise, or the Exercise the Aliments, since, when either happens, Diseases are produced; whereas, when they are equal, and duly proportioned to each other, Health is preserved.

Such an Equilibrium, therefore, is requisite between the Aliments and Exercise, that as much may be daily dissipated, as is taken in by way of Aliment. Whilst the same Quantity of Food is used, and the Exercise lessened, a Plethora begins to be formed. When Horses are well-fed in Stables, they soon become fat, but when exercised in hard Running for some Days, the additional Fat is soon dissipated.

As for usual Evacuations of Blood, whether natural or artificial; it is certain from Experience, that the oftener a Man is blooded, provided he is not quite weakened by it, his Vessels are afterwards rendered more turgid with Blood. Women have every Month a natural Evacuation of superfluous Blood; and Men, accustomed to repeated Venesections, are, about the usual times of Venesection, afflicted with the same Disorders Women labour under, in consequence of a Retention of the Menstrues: Thus at last the Strength of such Men degenerates into the lax and feeble State of Woman. Mr. Dodart, in *Hist. de l'Academie des Sciences*, An. 1707. observes, that in a Man, not weakened by Venesection, sixteen Ounces of Blood taken from the Veins were restored in five Days time. Hence it is obvious, that repeated Venesection disposes to a Plethora, whilst the Blood is, by that means, so soon regenerated, though the Body is rendered less firm, more lax, and consequently its Vessels more easily filled. I saw a Woman, who, on account of violent and often-returning Passions of Mind, was blooded above sixty times in a Year, and became so fat, that in a few Months she weighed one hundred and fifty Pounds more, than in her natural State; but the Blood, being daily regenerated, laid a Foundation for repeated Venesections, till, her whole Strength being destroyed, she fell into a Dropsy. It doth not, therefore, seem to be a laudable Custom for healthy Persons to bleed frequently every Year, by way of Caution and Prevention; since, by that means, the Body is weakened, and disposed for the more easy Repletion. Galen, who, in *Meth. Medend. Lib. 9. Cap. 5.* in certain Disorders, recommends frequent and bold Venesections, till the Patient faints away, condemns this Custom in the following manner: “ I hardly think it expedient to open a Vein often every Year; because, in conjunction with it, the vital Spirits are evacuated; and, if these are greatly diminished, the whole Habit is refrigerated, and all the natural Operations worse performed.”

All the Effects of a Plethora depend upon that Rarefaction of the Blood, which is to be ascribed to its increased Velocity, and the Heat arising therefrom, or to other Causes, only to be known from Observation. Hence arises a Dilatation of the Arteries, both sanguiferous and lymphatic, a Change of the Secretion, a Compression of the sanguiferous and lymphatic Veins, a Suffocation of the Circulation, an Inflammation, a Rupture of the Vessels, a Suppuration, a Gangrene, and Death.

All the Effects of a Plethora depend on the Rarefaction of the Fluids. When the Vessels are furnished with too large a Quantity of laudable Blood, there may still be a State of Health preserved: But when, by whatsoever Cause, the Blood contained in the Vessels is rarefied, then the Functions begin to be injured and impaired; and when, on such an Occasion, certain Changes appear in the Body, these are called the Effects of a Plethora; though they do not depend upon this Cause alone, since the Plethora is only the predisposing, and the Rarefaction the exciting or occasional Cause of them. From these two Causes, therefore, united, is formed the proximate Cause of these Phenomena; and as the exciting Cause, that is, the Rarefaction, puts the Plethora in Action, which alone, except in an high Degree, would not soon prove hurtful, hence, in that Sense, the Effects of a Plethora are said to depend upon the Rarefaction of the Fluids.

The Rarefaction of the Blood is to be ascribed to its increased Velocity, and the Heat arising from that Circumstance. When, in the same Time, a larger Quantity of Blood flows thro' the Vessels, its Velocity is said to be increased; but this cannot happen, without an increased Attrition of the Fluids on the Vessels. Hence arises Heat, and the Heat produces Rarefaction: But all the Causes, which, from Experience, seem to rarefy the Blood, seem to produce this Effect, by increasing the Celerity of its Motion, and the Heat arising from that Circumstance. Now a Rarefaction of the Blood is alone sufficient to produce all those Effects, which arise from a Plethora; for if the Blood was doubly rarer than it is, it would be the same thing, with regard to the Vessels, as if its Quantity was doubly increased. If, therefore, to a Plethora a Rarefaction of the Blood is added, all the Symptoms, capable of arising from a Plethora, will be

augmented. Hence it is obvious, why all those Medicines and Diseases, which, in consequence of an increased Velocity of the Blood, induce Heat, and consequently Rarefaction, produce the Symptoms of a distending Plethora. When a pale and chilly Girl is affected with the Small-pox, there forthwith arise a Heat, Redness, and inflammatory Tension of the Vessels, together with an intolerable Head-ach; not from an increased Quantity of the Blood, but from its Rarefaction, produced by an Acceleration of its Motion, and a consequent greater Heat.

Hence arises a Dilatation both of the sanguiferous and lymphatic Arteries. The Blood, when either increased in Quantity, or by Rarefaction, possessing more Space than it did before, will necessarily dilate the Vessels in which it is contained, more than before; and hence both the Arteries and Veins will be distended, and the Blood cannot be so easily propelled from the Arteries into the too much distended Veins: Hence a greater Resistance is made about the Extremities of the Arteries: For this Reason the Arteries will be more distended, by the Blood forced into them from the Heart. Now since, among the Causes enumerated by Physicians, why, from the same Blood, so various Liquors are secreted in various Parts, we may justly reckon the various Proportions which the secreting Ramifications bear to their Trunks, hence it is obvious, that, when this Proportion is disturbed by a Dilatation of the Arteries, all the Secretions may, also, be disturbed by that means.

As for a Compression of the sanguiferous and lymphatic Veins; in most Parts of the Body, Veins run along with the Arteries; and, when the Arteries are too tumid, they compress the adjacent Veins, which are furnished with weaker Coats: The compressed Veins convey their contained Blood to the Heart; the Heart forces it into the Arteries, and the Veins being compressed, are capable of receiving a smaller Quantity of it: Hence a still greater Dilatation of the Arteries succeeds; and, at last, almost the whole Blood is accumulated in them, whilst the Veins are more compressed and emptied.

As for a Suffocation of the Circulation of the Humours; this must necessarily happen, since, by these means, the Resistance made to the Blood, to be convey'd out of the Left Ventricle of the Heart, is every Moment increased. Hence the Pulmonary Veins cannot so easily convey the Blood into the Left Ventricle of the Heart: For this Reason the Blood will begin to be accumulated in the Vessels of the Lungs; the Resistance made to the Right Ventricle of the Heart will be increased, and, at last, the Circulation of the Blood suffocated. Hence we observe, highly plethoric Persons very red, with their small Arteries dilated, and receiving the red Blood. At last such Persons, being, as it were, suffocated, begin to assume a livid Colour, and often die suddenly; unless, either by Nature or Art, the Vessels are relieved, by lessening the Quantity of Blood, and, consequently, diminishing its Heat and Rarefaction.

As for an Inflammation; this must necessarily happen, on account of the gross Humours which have entered the too much dilated Orifices of the minute Vessels, and which cannot pass through the narrowest Parts of them.

As for a Rupture of the Vessels; this happens principally in those Parts where the Vessels are most tender: Hence it is, that, in plethoric Patients, Arteries breaking in the Brain so often produce mortal Apoplexies: Hence, also, it is, that Spittings of Blood are so frequently observed to arise from a Rupture of the Pulmonary Vessels, by the distending Blood in plethoric Patients.

As for a Suppuration and a Gangrene; these are the common Terminations of an Inflammation, which cannot be resolved.

As for Death; this seems to happen, because the too much distended Vessels make so great a Resistance to the Heart, that it cannot discharge its Contents. Hence the Circulation is suffocated: Or, because the large Vessels, being too turgid with Blood, compress the minute Vessels in the Brain, Cerebellum, and Nerves; or, when, in consequence of a Rupture of the Vessels, the Humours necessary to Life are evacuated; or, lastly, when, in consequence of a Rupture of the Vessels, the extravasated Fluids destroy the Actions of the Viscera, more immediately subservient to Life.

A Plethora then, when present, is easily known; and its future Effects readily foreseen.

A present Plethora is known, if the Causes which generate too large a Quantity of laudable Blood, and which are already enumerated, have preceded; if there is a great Redness in the whole Body, especially in those Parts in which the Vessels appear naked, and uncovered with Skin, as in the Corners of the Eyes, the Tunica Adnata, the internal Parts of the Eye-lids; the internal Parts of the Nostrils, the Mouth, Fauces, and Lips; if a great Heat is perceived, even at the Extremities of

the Body ; if the Veins are inflated, and the Pulse strong and full ; if, after violent Exercise, an increased Heat of the Atmosphere, Wine, or any other heating Substances, the Patients perceive, in all their Muscles, a soft, full, distending Tumor, together with a certain Immobility, so that they can hardly clinch their Fingers ; then they begin to be sluggish, lethargic, and have a Discharge of Tears from their Eyes.

In forming the Prognostic of a Plethora, we foresee, that all the Symptoms already enumerated will happen ; and particularly, that the Functions of the whole Brain will be disturbed, because, in the Head, all the Parts are naturally full. Hence, when the large Vessels full of red Blood are distended, the other smaller Vessels will be compressed ; because the Bones of the Cranium cannot yield. Hence all the Disorders of the Brain, from the slightest Vertigo to the most fatal Apoplexy, may arise from a Plethora.

A Plethora is cured by Venesection, Exercise, Watchings ; a sharp and acrid Diet, after due Evacuations ; and by a gradual Omission of these Evacuations.

By Venesection. A Redundance of laudable Blood is the Cause of all the Misfortunes already enumerated. Every thing, therefore, which diminishes this Redundance, is beneficial. But this is best done by Venesection, immediately after which all the Symptoms are relieved. A Physician never practises more rationally, than when he imitates the Ways and Methods, which Nature herself takes, in relieving Disorders. Now we see, that both in Health, and under Diseases, a Plethora, arising either from a Redundance or Rarefaction of the Blood, is happily removed by a salutary Hæmorrhage, especially from the Nostrils. Hence, in young Persons, in a perfect State of Health, at that Period of their Lives, when their Vessels, now becoming stronger, begin more forcibly to resist the Fluids, such Evacuations of Blood are so frequently salutary, especially in the Spring, when the Heat increases. For the same Reason, also, Hæmorrhages from the Nose have often proved salutary in the most violent and acute Disorders : Now Physicians, imitating these Efforts of Nature, order the Quantity of Blood to be lessened by Venesection ; and if Symptoms indicate, that the Arteries are only highly distended, and the Veins collapsed, because the Blood cannot pass from the Arteries to the Veins, which frequently happens in acute, inflammatory Disorders, then some of them venture to order Arteriotomy ; and, as in large Arteries this cannot be done without Danger, the same Effect may more safely be produced by opening many small Arteries by Scarifications. Hence *Prosper Alpinus*, in his *Treatise de Medicina Ægyptiorum*, informs us, that the *Egyptians*, among whom these acute Disorders are frequent, greatly esteem such Scarifications.

Some, especially of the Followers of *Helmont*, condemned Venesection, as a Practice both cruel and useless : They believed, that, by Abstinence from Aliments and Drink, the Redundance of the Humours was more effectually lessened, since, by insensible Perspiration, and the other Excretions, several Pounds of Humours are daily evacuated ; which, however, are restored by Aliments and Drink. Hence they maintained, that since the natural Excretions continued to diminish the Fluids, whilst what was lost was not restored by Aliments and Drink, there was a greater Diminution of the Fluids, by Abstinence for twenty-four Hours, than by the boldest Venesection : But by this Method the most subtle Humours are only dissipated from the Body, whilst the red, thick Blood, distending the larger Vessels, is hardly diminished ; which is the Circumstance most required ; and all the Humours become more acrid, whilst no new Chyle is mixed with the Blood.

But tho' Venesection lessens the Redundance of the Blood, yet it not only leaves the Body equally subject to Repletion, but even disposes more to the Generation of a fresh Plethora, as we have already observed. Hence it is necessary the Body should be rendered so firm, as that it may not easily, for the future, accumulate a Redundance of Blood.

As for Exercise ; this not only dissipates what was retained during a State of Rest, but, also, to corroborate the Solids, that they do not easily yield to the Fluids they contain. Thus we rarely find Persons daily accustomed to hard Labour, plethoric, even though they should be highly voracious : But Exercise is not proper, till by Venesection the Vessels are emptied ; otherwise, being distended, a Rupture of them would very readily happen.

As for Watchings ; much Sleep is reckon'd among the Causes of Plenitude ; so that Watching must produce the opposite Effect.

As for a sharp and acrid Diet after due Evacuations ; soft Aliments easily changed by the Chylopoetic Organs, afford a large Quantity of Chyle. Hence the Quantity of Blood is daily increased, unless, by violent Exercise, the superfluous Hu-

mours are dissipated. Hence Nature has supplied new-born Infants with an highly soft Milk, already changed in the Mother's Body, because, in that Age, a very quick, and daily Increase of the Humours is requisite. But when the contrary is required, as in the Cure of a Plethora, for Instance, then harder Aliments of a more difficult Digestion, and acrid, aromatic, and stimulating Substances, prove beneficial ; because, by this means, less Chyle, and, consequently, all other Circumstances being alike, less Blood will be generated ; and the Motion of the Humours being increased by acrid stimulating Substances, an Accumulation of them will not so easily happen. But before the Quantity of the distending Fluids is lessened by Evacuants, acrid Substances are highly pernicious, lest a Rupture of the too full Vessels should happen upon an Increase of the Motion of the Blood by means of stimulating Substances.

As for the gradual Omission of usual Evacuations ; we have already observed how much frequent Venesections dispose to a frequent Plethora. Hence these Evacuations are to be omitted ; but this is not to be done all at once, because all sudden Changes from usual to unaccustom'd things are bad, especially in this Case ; for by frequent Venesections the Body is habituated to accumulate a large Quantity of Blood, which unless removed, will produce all the Effects of a Plethora : For this Reason, such usual Evacuations are to be gradually lessened as to their Quantity, and a greater Interval of Time put betwixt them, that they may be gradually diminished without any Danger. In taking such Measures, we imitate the salutary Method of Nature, about the Time when the Menses begin to prove defective in Women ; for then this Evacuation is naturally and gradually diminished in Quantity, and its Returns appear at longer Intervals, till it at last totally ceases. But, when the Menstrual Discharge ceases suddenly, it is generally productive of terrible Consequences. *Van Swieten.*

PLETHORICUS. An Epithet for a Person abounding with Blood, or labouring under a *Plethora*.

PLETHRON. The sixth Part of a *Stadium*.

PLEURA. The Pleura is a Membrane which adheres very closely to the inner Surface of the Ribs, Sternum, and Musculi Intercostales, Sub-costales, and Sterno-costales, and to the convex Side of the Diaphragm. It is of a very firm Texture, and plentifully stored with Blood-vessels and Nerves, in all which it resembles the Peritonæum, and, likewise, in that it is made up of an inner true membranous Lamina, and a cellular Substance on the Outside, which is a Production or Continuation of the Lamina.

The cellular Portion goes quite round the inner Surface of the Thorax, but the membranous Portion is disposed in a different manner. Each Side of the Thorax has its particular Pleura, entirely distinct from the other, and making, as it were, two great Bladders, situated laterally with respect to each other, in the great Cavity of the Breast, in such a manner, as to form a double Septum, or Partition, running between the Vertebrae and the Sternum, their other Sides adhering to the Ribs and Diaphragm.

This particular Duplication of the two Pleurae is termed *Mediastinum*. The two Laminæ, of which it is made up, are closely united together near the Sternum and Vertebrae ; but in the Middle, and toward the lower Part of the fore Side, they are separated by the Pericardium and Heart. A little more backward they are parted in a tubular Form, by the Œsophagus, to which they serve as a Covering ; and in the most posterior Part, a triangular Space is left between the Vertebrae and the two Pleurae from above downward, which is filled principally by the Aorta.

Before the Heart, from the Pericardium to the Sternum, the two Laminæ adhere very closely, and there the Mediastinum is transparent, except for a small Space near the upper Part, where the Thymus is situated ; so that in this Place there is naturally no Interstice, or particular Cavity. The apparent Separation is owing entirely to the common Method of raising the Sternum, as was plainly demonstrated by *Bartholinus*, in his *Treatise of the Diaphragm*, published at *Paris* in 1676.

The Mediastinum does not commonly terminate along the Middle of the Inside of the Sternum, as the common Opinion has been. I demonstrated, says *Winslow*, in 1715. to the Royal Academy of Sciences, that, from above downward, it inclines toward the Left Side ; and that if, before the Thorax is opened, a sharp Instrument be run through the Middle of the Sternum, there will be almost the Breadth of a Finger between the Instrument and the Mediastinum, provided that the Sternum remain in its natural Situation, and the Cartilages of the Ribs be cut at the Distance of an Inch from it, on each Side.

From all this we see, not only that the Thorax is divided into two Cavities, entirely separated from each other, by a middle Septum without any Communication ; but, also, that, by the Obliquity of this Partition, the Right Cavity is greater than the Left ; and hence we may judge of the Uncertainty of Trepanning

P L I

panning the Sternum, which the Antients have recommended in some Cases.

The cellular Portion of the Pleura connects the membranous Portion to the Sternum, Ribs, and Muscles; to the Diaphragm, Pericardium, Thymus, and Vessels; and, in a Word, to whatever lies near the convex Side of the membranous Portions of the Pleura. It, likewise, insinuates itself between the Laminæ of the Duplication, of which the Mediastinum is formed, and unites them together. It even penetrates the Muscles, and communicates with the cellular Substance in their Interstices, all the Way to the Membrana Adiposa on the external convex Side of the Thorax. In this the Pleura resembles the Peritonæum.

The Surface of the Pleura, turned to the Cavities of the Breast, is continually moisten'd by a lymphatic Serosity, which issues through the Pores of the membranous Portion. This Fluid is said to be secreted by imperceptible Glands; but the Existence of these Glands has not been hitherto demonstrated.

The Arteries and Veins of the Pleura are principally Ramifications of the Intercostals; and these Ramifications are exceedingly numerous, and, for the most part, very small. The Mammariæ Internæ and Diaphragmaticæ, likewise, send Branches hither, which communicate very frequently with those that come from the Intercostals.

The Mediastinum has particular Vessels called the *Arteriæ* and *Venæ Mediastinæ*, which are commonly Branches of the Subclaviæ. The Mammariæ Internæ send, likewise, Ramifications to the fore Part of it, the Diaphragmaticæ to the lower Part, and the Intercostales and Œsophagææ to the back Part.

The Nerves are Ramifications of the true Intercostales, call'd otherwise *Costales*, and *Dorsales*. Near the Vertebrae, they communicate with the great Sympathetic Nerves, improperly call'd *Intercostales*, and but very little with the middle Sympathetici, or those of the Eighth Pair.

The Pleura serves in general for an inner Integument to the Cavity of the Thorax. The Mediastinum cuts off all Communication between the two Cavities, and hinders one Lung from pressing on the other, when we lie on one Side. It, likewise, forms Receptacles for the Heart, Pericardium, and Œsophagus; and is continued over the Lungs.

Before we leave the Pleura, it must be observed, that these Portions of it which adhere immediately to the Ribs, may be looked upon as the Periosteum of their inner Sides. This Adhesion keeps the Pleura stretched, and hinders it from slipping or giving way. It, also, renders this Membrane extremely sensible of the least Separation caused by a coagulated Lymph, or accumulated Blood; the nervous Filaments being, likewise, in this Case, very much compressed in Inspiration, by the Swelling of the Intercostal Muscles. *Winflow's Anatomy.*

PLEURITIS, *πλευρίτις*, from *πλευρά*, the PLEURA. A Pleurisy, or Inflammation of the PLEURA. See PERIPNEUMONIA.

PLEURON, *πλευρόν*. The same as PLEURA.

PLEUROPNEUMONIA. The Name of a Distemper, consisting of a Complication of a Pleurisy, and Peripneumony.

PLEURORTHOPNŒA, according to *Blancard*, is a Pleurisy, in which the Patient cannot breathe without keeping his Neck erect.

PLEXUS, in Anatomy, is a kind of Net-work, or Complication of Vessels. Thus a Congeries of Vessels within the Brain is call'd *Plexus Choroïdes*, *Reticularis*, or *Retiformis*. A *Plexus* of Nerves is an Union of two or more Nerves, forming a sort of Ganglion, or Knot.

PLICA POLONICA. In *Poland* and *Lithuania*, this Disorder is endemial, and well known. It consists in a preternatural Bulk of the Hairs, which, being firmly conglutinated and wrapped up in inextricable Knots, afford a very monstrous and unseemly Spectacle. When these are cut, the Blood is discharged from them, the Head racked with Pain, the Sight impaired, and the Patient's Life frequently endangered. This Misfortune is principally incident to the *Jews* who live in those Countries. Though it seems difficult to account for this Disorder, and assign its true Causes, we shall, nevertheless, make an Attempt of this Kind. What, therefore, contributes not a little to its Production, is the sordid and nasty manner of Life to which these People are addicted; for they rarely comb their Hairs, sleep in low, moist Rooms, and drink large Quantities of Brandy. The Waters, also, concur and assist in the Generation of this Disorder. Hence *Gebema*, in *Epist. ad Bontekoe de Plica Polonica*, is justly of Opinion, that the Causes of this Disease is lodged in some particular Waters of *Poland*, which, if either drank, or used for washing the Body, produce the *Plica*; which he confirms by the Fate of two Soldiers, who, when intending to wash their Bodies, had scarce immersed their Heads in the Water of a certain Pond, before their Hairs were contracted into many Folds. Besides these Causes, we suppose an hereditary Fault convey'd from the Parents, and which consists in too great a Bulk of the Pores and bulbous Hairs under

P L U

the Skin of the Head. Hence the thick and glutinous nutritious Juice, produced by their coarse Aliments, and impure Waters, is, by the Heat excited by their drinking Brandy, forced into the Cavities of the Hairs, and, sweating through their Pores, produces this terrible Disorder. *Hoffman. de Morb. cert. Reg. propr.*

This Disorder, unless the peccant Matter is convey'd to the Hairs, is very dangerous; and violent Symptoms are produced in almost all the Parts of the Body, where it is deposited and lodged.

But if Nature, in a salutary and critical manner, throws the peccant Matter to the Hairs, an unseemly Twisting of them is produced, whilst the Patient remains free from every other Symptom; since Nature generally throws the Remains of the peccant Matter to the Hairs, the Disorder of which is, by many, supported to the Ends of their Lives, without any inconsiderable Inconvenience.

If the folded or twisted Hairs are rashly cut off, Blindness, and other terrible Symptoms, are excited, not because, as some think, the Head is by this means exposed to Cold, which might be prevented by wearing a Cap; but because the Substance, in which Nature used to lodge the peccant Matter, is removed, and a free Evacuation of the sordid Humours by that means prevented. And in this Disorder the same happens as in old Ulcers, which, unless the Body is first well cleansed, cannot be healed up without the greatest Danger. Nor is it safe to close Fontanels, which have been kept open for a considerable time.

When the peccant Matter is no longer lodged in the Body, the Plicæ, or Twistings of the Hair, are spontaneously removed; and if we are absolutely certain, that such a Matter is no longer in the Body, which, however, is hard to be known, the Plicæ, or Twistings, may be cut off.

A perfect Method of curing this Disorder is, in my Opinion, unknown; undoubtedly, because in those Parts of *Poland* in which this Disease is endemial, there have been few Physicians, who, from what is commonly known of the Nature and Cure of the *Plica Polonica*, have been able to lay down a rational and judicious Plan for treating it.

'Tis certain, that Purging and Venesection are so far from being beneficial in this Disorder, that they often prove hurtful. Thus the Rector of the Academy of *Zamosca* informs the Physicians of *Padua*, that, if they attempt the Cure of this Disorder by common Purgatives, the Patient will be render'd worse, because these, instead of correcting and subduing the peccant Humours, throw them into violent Commotions, and more effectually distribute them through the whole Body; in consequence of which, intense Pains are produced in all its Members. *Hercules Saxonia* is of the same Opinion, and confirms this Doctrine by various Instances of Persons rendered blind, lame, and subjected to other Misfortunes, by using Purgatives in the Beginning of the *Plica Polonica*, as, also, in the Scurvy.

'Tis, therefore, most safe and expedient, as soon as possible, to solicit the peccant Matter to the Hairs, to which it naturally tends. And this Intention, as we learn from Experience, is, of all others, the most effectually answered by Lotions prepared of Bears-breech. *Sennertus.*

PLICHAS, *πλῆχας*. The same as PLECHAS.

PLINIA.

The Characters are;

It hath a Bell-shaped Flower, consisting of one Leaf, which is divided into five Segments at the Margin; from whose Cup rises the Pointal, which afterward becomes a globular, soft, chaneled Fruit, in which is included one Seed of the same Form.

Miller mentions but one Sort of *Plinia*; which is,

Plinia fructu croceo odorato. Plum. Nov. Gen.

This Plant was discovered by Father *Plumier*, in the *West Indies*, who gave it this Name, in Honour to *Pliny* the famous Natural Historian. *Miller's Dict.*

PLINTHIUM, *πλινθιον*. A Name of several Machines for making Extension. One of these is described by *Oribasius*, de *Laqueis*, Cap. 13. He, also, describes two more, in his *Treatise de Machinamentis*, Cap. 8. one of which he calls *Nilei Plinthium*.

PLINTHITIS, *πλινθίτις*. A Species of Alum, called, also, **PLACITIS**.

PLOTES. A Name for the *Mugil*, in *Oribasius*, *Collect. Medicinal. Lib. 2. Cap. 58.*

PLUMACEOLUS. A Pledget, Bolster, or Compress.

PLUMACEUS. An Epithet for certain Magisteries in *Zwelfer*, importing their being extremely fine, and soft as Feathers, or Down.

PLUMBAGO.

The Characters are;

The Root is fibrous, thick, fleshy, hot, and perennial; the Leaves

Leaves are alternate and entire. The End of the short Pedicle unfolds itself into a monophyllous, quinquefid, and very hairy Calyx, shaped like a Tube, in whose Centre is seated the Ovary furnished with its proper Tube. On the Apex of the Ovary, grows a monopetalous Flower, consisting of a long Tube, which has its upper Part expanded into a Circle, so as to resemble the Flower of Jessamin; these Flowers are disposed in Spikes. The Seed is oblong and acuminate.

Boerhaave mentions two Species of *Plumbago*; which are,
1. *Plumbago quorundam*. *Tourn. Inst.* 140. *Boerb. Ind.* A. 77. *Dentellaria*. *Offic.* *Plumbago Plinii*. *Ger.* 1069. *Emac.* 1254. *Raii Hist.* 1. 394. *Dentellaria Rondeletii*. *J. B.* 2. 941. *Lepidium Dentellaria dictum*. *C. B. P.* 97. *Lepidium Monspeliacum Dentellaria dictum*. *Park. Theat.* 885. LEADWORT.

The Stalks of this Leadwort are but weak and slender, clothed with long, narrow, whitish, green Leaves, which encompass them. The Flowers grow in short thick Spikes, small and purple, of a single Leaf cut into five Segments, which are succeeded by rough, hairy, naked, solitary Seeds. The Root is large and thick, and the whole Plant is hot and biting, like *Lepidium*.

This is a Plant seldom or never used. It is of an hot, and even a caustic Nature, like *Pellitory of Spain*; and has been made use of, like that, for the Tooth-ach; it is said, that, even held in the Hand, it will cure the Pain of the Teeth. *Miller's Bot. Off.*

2. *Plumbago Ceylanensis*, folio splendente *Ocymastri*, flore lacteo.

PLUMBAGO. *Plumbago*. The same as MOLYBDÆNA.

PLUMBUM. Lead.

The Greek Authors frequently use the same Name to express both Lead and Tin; and, accordingly, their Latin Translators interpret *Λαυιτεγς*, both by *Plumbum* and *Stannum*. *Geo. Agricola* mentions three Kinds of *Plumbum*, one white, which we call Tin; another of an Ash-colour, which we call *Bismuth*; and the third livid, which is our Lead.

THE FORMS OF ITS ORE.

Lead is seldom found pure in the Mines, and has different-coloured Ores, viz. black, yellow, and ash-coloured; it is, also, found in red, or white rocky Stone, and sometimes in the Form of Dice, with shining Lead-coloured Surfaces; and, sometimes mixed with white, yellow, or green Fluors. There are many Lead Mines in *Spain*, *Italy*, and *Germany*; but the richest are those of *England*.

The Ore is of a poisonous Quality, especially with regard to Brutes. "They who live near where it is washed, says Mr. *Beaumont*, can neither keep Dog nor Cat, nor any Sort of Fowl, but they all die in a short time." He adds, that, "not only Calves, but even Children, have been known to be kill'd, by only being in Houses where Lead-ore had been kept some time; and that if any Sort of Cattle fed often on the Grass, on which the Steam which rises from the Smelting of Lead, falls, they all die soon after." *Phil. Collect.*

DIFFERENCES OF ITS ORE.

There is a very considerable Difference between the Ores of different Mines. Some is so like Steel, that the Workmen call it Steel-ore; which being of more difficult Fusion than ordinary, they mix other Ore with it. There is another, which, from its Readiness to vitrify, and its Use in glazing the Potters Vessels, is called *Potter's Ore*.

Our English Lead-ores are reducible to three Classes; the first, those which, in the ordinary ways of Melting, afford from thirty to forty Pounds of Metal, for every hundred Weight of Ore. The second, from forty-five to sixty. The third, from sixty to eighty.

LEAD CONTAINS SILVER.

The Lead found in some Parts of *England*, contains from five to ten Pounds of Silver in a Tun Weight; which they get out by telling, and recover the Lead without any great Waste.

The Lead of many Mines, being skillfully treated, affords Silver; but the Quantity of Silver in the Ore, does not hold in Proportion to the Quantity of Lead. Mr. *Boyle* caused some Lead-ore to be tried, which, being the most promising he had ever known, gave him Hopes of some considerable Quantity of Silver: But though it proved so rich in Lead, as to afford after the Rate of seventy Pounds to the Hundred; yet one of the most expert Artificers in *Europe* could not extract one Grain of Silver from it. Yet a Piece of Lead-ore was brought from *Ireland*, which seemed so light in the Lump, that he thought it scarce deserved to be wrought for Lead; which, however, was found upon Trial, so well stored with Particles of Silver, that he encouraged the Owner of the Mine to work it.

HOW SMELTED.

Some Lead-ore requires no previous Preparation to its being smelted, unless by grinding. They barely throw it upon a Wood-fire, or a Forge-hearth, where the Metal running into a Basin in the Hearth, they ladle it out, and cast it into an iron Mould, which gives it the Form of what we call *Pigs*.

In the Lead-works at *Mendip*, in *Somersetshire*, the Method of procuring the Metal is thus delivered by Mr. *Glanvil*, in *Phil. Transact.* No. 39. "When they have got the Ore they beat it small, then wash it clean in a running Stream, and then sift it in iron Rudders. They next make an Hearth, or Furnace, of Clay, or Fire-stone; and therein build their Fire, which they light with Charcoal, and keep up with young oaken Gads, blown with Bellows. After the Fire is lighted, and the Fire-place hot, they throw the Lead-ore on the Wood, which melts down into the Furnace; and, then with an iron Ladle they take it out, and cast it in Sand into any Form they please."

Lead is the heaviest Body, after Mercury. Hence melted Lead constitutes a Fluid of the third Order of Gravity; wherein all Bodies, whether metalline or not, excepting Gold and Mercury, might float, if there were no other Cause to the contrary.

If all the Impurities of Lead could be perfectly purged away, its Weight might nearly approach to that of Mercury. Accordingly, in analysing this Metal, it is said to yield a considerable Quantity of Mercury; though what the other Ingredient is, united with the Mercury, seems hard to say. Lead, though a cheap and common Metal, has yet a great Affinity with Gold, at least in point of Weight, which seems to be the most distinguishing and immutable Character of Gold; and what makes the Resemblance still closer is, that Lead does not mix with any Metals, except those allowed to be Mercurial ones.

Lead proves extremely simple in all Kinds of Trials.

It is not fixed, but fumes in the Fire; and, after continuing long in Fusion, penetrates most of the Vessels hitherto used.

It is the softest of all Metals, easily ductile, and the least elastic or sonorous. There is no Metal whose Figure is so easily changed; and hence it proves very ductile, and easily flexible, though not capable of being drawn out into such simple, fine, coherent Parts, as Gold.

It diminishes the Sound of other Metals, when mixed with them. This Property follows from its Softness; for, if two equal leaden Balls be struck with equal Velocities against each other, they will both remain fixed in the Point of Contact, without any Vibration or Resilition; so that of course no Sound can be produced. 'Tis on account of this Unelasticity of Lead, that it has been used by Dr. *Wallis*, Mr. *Huygens*, and others, for determining the Laws of Percussion. By this Property, also, Lead should appear to be nearly allied to Gold, which is the next least sonorous or springy of all Metals. Accordingly several Experiments have been produced, to prove that Lead, melted, always either contains, or generates, some Portion of Gold. M. *Homburg* assures us, that taking a Quantity of Silver, and separating it from all heterogeneous Matter by testing with Lead, then putting a Piece of it in Aqua-fortis, a little Gold fell to the Bottom. And, upon adding Copper to the Aqua-fortis, the Silver was precipitated.

Lead melts the soonest of all Metals, except Tin, even long before it ignites; and thus grows scurfy, readily vitrifies, and, being now fused, it passes through any Vessel. A Quantity of Lead, being set over the Fire in an iron Ladle, no sooner begins to run, than its Surface appears exceedingly bright, and shines like Mercury; but its Face soon alters, and you discern a Cloud in it, which gradually increases, till the whole Surface appears darkened with a dusty Scoria. This Dust being blown away with Bellows, there straight arises a new Supply; and so on till the whole Lead is thus converted into Scoria, which are only the Matter of the Lead gently calcined. A more violent Fire vitrifies them; that is, converts them into an heavy, brittle, pellucid, elastic, sonorous Matter, called *Glass*; into which other Metals are indeed convertible, but Lead the easiest; and which is of such a penetrating Nature, that it runs through all the common Crucibles, almost as Water through a Sieve.

The Calx of Lead has nothing of the Appearance of Lead; and yet by only exposing it to a strong Fire, and adding a little Iron-silings, or any unctuous inflammable Matter, the Lead is easily recovered.

And if, while the Lead is in Fusion, it be kept continually stirring with a Spatula, it turns into a red Powder, called *Minium*, or *Red-lead*; in which Operation this is further observable, that the Lead augments in Weight.

Lead throws up light Bodies that are cast into it; vitrifies with the baser Metals; and, having so done, carries them along with

PLU

with it from the Cavity of the Test; thus leaving only Gold and Silver behind, separated from the rest. After Fusion, it quickly returns, in the Cold, to a solid Mass, though more slowly than Tin. Lead dissipates all Metals tested with it, on the Cupel, except Gold and Silver; which is a Property, that had we been unacquainted with, all our Treasures of Gold and Silver had lain in little Compaſs; this being of principal Use in obtaining those Metals.

The Foundation of the Process is this: Any Mass, of what Kind soever, whether Metal or Stone, Salt or Sulphur, Gold and Silver only excepted, being mixed with Lead, and exposed to the Fire, separates, and flies off.

Upon the Whole, there are three ways whereby all the Matters mixed with Gold and Silver are destroy'd and lost, when cupel'd with Lead. 1. By volatilizing and evaporating. 2. By turning to Scoræ, and retiring to the Sides of the Test. 3. By penetrating the Pores of the Cupel; which only happens to such Bodies as can neither fly off in Fumes, nor work to the Sides in the way of Scoræ.

Lead dissolves in Aqua-fortis, not in Aqua-regia, and thus yields a sweet Salt. It dissolves in most of the weak Acids; but very difficultly in the stronger, unless they be diluted with Water. Thus in Aqua-fortis it dissolves slowly; but very readily in Vinegar, small Aqua-fortis, *Rhenish* Wine, Spirit of Vinegar, and the like; and even in Oil of Vitriol well diluted with Water. Add, that, in whatever Acid it is dissolved, the Solution becomes considerably sweet like Sugar. The Fumes of Wine or Vinegar dissolve it into a white Powder, or Calx, called *Cerufs*, or white Lead.

It is found plentifully in various Mines of *Europe*; being cheap, and the Consumption of it large: But 'tis in its Nature very surprising, and for certain Purposes exceedingly useful. In the fabulous way, it is called, the *Origin and Father*, as well as the *Devourer of other Metals*.

Its Ore is usually ponderous and shining, of a Lead-colour, which yield half the Quantity of Metal. Sometimes it is white, red, or yellow, which are poorer Kinds: It often contains a little Silver, by which the Assayers, if not on their Guard, are liable to be deceived.

ITS MEDICINAL VIRTUES.

Both in its crude State, and in all its Preparations, Lead seems to be cooling, thickening, repelling, absorbing, and contracting, so as to retard the Circulation of the Blood, hinder all the Secretions, and hurt the Nerves, by causing Spasms, Convulsions, Tremblings, Difficulty of Breathing, and Suffocation. Whence it appears unfit for internal Use in any large Dose; and, accordingly, its medicinal Uses are principally external.

ITS OTHER USES.

Its Uses in the Hands of the Plumber, Glazier, Shot-maker, white and Red-lead-maker, Potter, Assayer, Jeweller, Painter, and others, need not be mentioned, as being commonly known. A Mixture of it with Tin is the Foundation of enamelling; and counterfeit Gems are made by its means.

HINTS FOR ITS ALCHEMICAL HISTORY.

Let the Saturnus Cornuus be examined for Mercurification.

What Vessel will hold the Glass of Lead in Fusion?

Let the talky Nature of Litharge be examined.

As Lead fulminates with Nitre, and flashes in the Flame of a Candle, and burns blue, it may seem to contain a Sulphur.

Is not the sulphureous Principle in Lead small in Quantity, and but loosely joined; since a small Degree of Fire is able to separate them?

Exposed upon a Tile to the Focus of a Burning-glass, it fumes and turns to a yellow or red Calx; then melts into a yellow Fluid, which soon evaporates in Smoke; but, if removed before this happens, it hardens to a yellow Mass like Orpiment, consisting of Laminæ like Talc. This being again exposed to the Focus, on a Piece of Charcoal, recovers the Form of Lead. But if the Lead be laid upon Charcoal, it thus totally dissipates in Fume, and leaves no Glass behind. Hence what Relation has it to Mercury, Gold, &c.?

Is it not composed of a soft, talky, vitrifiable Earth, and a small Proportion of a Sulphur, or inflammable Substance, lightly joined therewith?

THE CALX OF LEAD BY THE VAPOUR OF VINEGAR.

Take a large glass Body, cut so as to have a wide Mouth, with an Alembic-head answering to it; in this Head put thin Plates of Lead, so as to stand somewhat erect, without falling, all around the hollow Part of the Ledge; put Vinegar into the Body; set it in a Sand-heat, put on the Head with its Lead-plates, apply a Receiver, and distil with a gentle Fire for twelve Hours; then leave off, and let all cool for twelve Hours; the Plates, being now gently dried, grow white, or appear covered with a white Powder, which, being brushed off with a Hare's-foot, is called *Ce-*

PLU

rus, or White-Lead. If the Operation be several times repeated, the whole Body of the Lead will be turned into the like perfectly, insipid, scentless, white Powder; the Vapour of the Vinegar raised in the Operation condenses into a whitish, turbid, sweet, nauseous, styptic Liquor, called the Vinegar, or the Solution of Lead.

REMARKS.

Hence we may see how easily Lead is dissolved by a very mild Acid, and soon changed from its malleable State into a loose Powder, or brittle scaly Plates; but the distilled Liquor, impregnated with dissolved Lead, is a true Solution of Lead, which, being inspissated, affords the true Salt of Lead. This Operation is continually made in Lead exposed to the Air, that abounds with Acids; whence Coverings of Lead, that are exposed to the Air, resolve into a white Calx, and this the sooner, the more the Air abounds with Acids. If the same Operation be performed upon Iron or Copper, these Metals, also, are dissolved on their Surfaces; the Iron into a red Calx or iron called Rust, and the Copper into a green Substance called Verdigrise; the Iron into a gold-coloured Liquor, and the Copper into one that is perfectly green. The Cerufs thus prepared is likewise compounded of the Acid of Vinegar, and the dissolved Body of the Lead, but the Acid is here latent. This Cerufs is of Use in watry, ulcerous, running Sores, or Diseases of the Skin, being sprinkled thereon. If this fine Powder be drawn along with the Breath into the Lungs, it causes a violent and almost incurable or mortal Asthma: If received into the Mouth, and swallowed along with the Spittle, it occasions inveterate Distempers in the Viscera, intolerable Faintings, Weakness, Pains, Obstructions, and at length Death itself. These terrible Effects are daily seen among those who do any Work in Lead, but principally among the Makers of White-lead. Let Men, therefore, beware of this Poison, which being both without Smell and Taste, proves the more pernicious as it is the less discovered, and does not shew itself 'till it has destroyed the Body. Hence we learn also how easily Lead may be dematerialized, and turned to a Calx; and this appears upon all Experiments. If Lead be melted over a gentle Fire, in a clean unglazed earthen Vessel, it runs pure like clean Quicksilver, but soon grows dark upon its Surface, and gathers a Skin, which being carefully taken off with an iron Ladle, proves a kind of Calx: Now, again, the Surface appears white, and again generates a Skin, that may be taken off, 'till at length, the whole Body of the Lead is changed into this Calx, which also is poisonous. This Calx, and the former Cerufs, being long calcined, and stirred over the Fire, at length increase in Weight, and turn of a bright-red Colour; and the like is found in Lead-ore long calcined. In the Smelting of Copper, there rises a Scum, which principally consists of Lead; and, if of a Colour betwixt Red and Yellow, it is called Litharge of Gold; if paler, the Litharge of Silver; tho' both of them are nearly the same thing, and of the same Virtue. Lead-ore does not much differ from the former. Hence the same Lead may exist under various Colours, Gravities, Masses, and Forms, and may be dissolved in the same Liquors, and thus afford the same Productions; nor is it of much Significance, whether Cerufs, Litharge, Red-lead, or Lead-ore be thus corroded by Vinegar; for in each Case the same Salt of Lead is produced; they have all of them the same medicinal drying Virtue, and poisonous Quality. Red-lead gains considerably in Weight from the Fire; this may, perhaps, proceed from the Acid of the Fuel, imbibed by the Lead from the Fire.

THE VINEGAR OF LEAD.

1. Boil Cerufs in a tall Bolt-head, with twenty times its Weight of strong distilled Vinegar, in a little wooden Furnace, often shaking the Vessel for four Hours; then let all cool, strain off the pure Liquor, add more distilled Vinegar to the Remainder, repeat the Operation as before, and continue thus, till the Cerufs is almost dissolved: Mix the several Solutions together, they will be found to have lost the Sharpness of the Vinegar, and to have become sweet, nauseous, and styptic. This is called the Vinegar of Lead, as also Virgins Milk, because it cures red Spots, Pimples, and little Ulcers in the Face. If this Vinegar be filtered, and distilled with a gentle Fire to a Fourth, there comes over a nauseous Water, that is not acid, but of a disagreeable and particular Odour. All the Acid of the Vinegar is retained below, in the resolved Cerufs. Let it be preserved under the Title of Vinegar of Lead, and it is to be esteemed of the same Virtue with Vinegar of Litharge.

2. If instead of Cerufs we take the Litharge of Gold, or Silver, Red-lead, or Lead-ore, reduce them to Powder, and boil them with Vinegar as above, they will afford the same undistinguishable Vinegar of Lead. This only is particular of it, that, when cold, it filters with Difficulty, as then blocking up the Paper; but, when hot it runs through easier.

3. When fresh-distilled Vinegar is pour'd to this inspissated Solution, and boiled, and again reduced almost to the Consistence of Honey, the Vinegar distilled off loses much of its acid Virtue, leaving the acid Part in the metallic Liquor; the Part that floats

PLU

floats above, being somewhat oily, unctuous, and saccharine, is called Oil of Lead, and consists of the Metal and the Vinegar. The oftener this Addition of Vinegar is repeated, the more unctuous the Liquor becomes, and the harder to dry.

REMARKS.

Hence we have a new Method of calcining and dissolving a very ponderous Metal, and bringing it into a Liquor. Here we see a new Taste and Odour produced, by Acid and Metal; and an Attraction and Separation of the Acid by the Metal, till it is fully saturated and impregnated. This Vinegar of Lead long preserves uncorrupted the Bodies of Animals that are plunged therein, or penetrated and dried therewith; it coagulates the animal Juices, and preserves them from Putrefaction; if diluted and rubbed upon the Skin, it cures Breakings out, Redness, Inflammations, and the Erysipelas; it gives a Whiteness and Beauty to the Skin, but proves pernicious to the Body; at length occasioning a Consumption, as appears by many melancholy Examples. If the inspissated Oil of Lead be mixed with an equal Quantity of Oil of Roses, it makes a white Balsam highly commended by the Surgeons.

THE SALT OF LEAD WITH VINEGAR.

1. Inspissate a Quantity of the Vinegar of Lead in a low glass Body, with a very wide Mouth, till it becomes almost as thick as Oil; set it in a quiet cold Place, and a whitish-grey Mass will shoot to the Bottom, in small erect Spiculae; pour off all the Liquor, and with a gentle Fire slowly dry the Remainder; which will now be white like Sugar, and is called the Sugar of Lead.

2. Dissolve this Sugar of Lead in fresh and sharp distilled Vinegar; let it stand to depurate; inspissate the Liquor to the Thickness of Oil; set it in a cold quiet Place, and there will shoot at the Bottom thick solid Crystals, perfectly resembling the Form of vegetable Candy-sugar, and having nearly the same Taste.

3. If these Crystals be again dissolved in fresh-distilled Vinegar, and the Solution be depurated by standing, then inspissated by a soft Fire to the Thickness of Oil, a Liquor will be obtained which can hardly be dried, and rendered hard by a small Fire; but it remains somewhat fixed, and may be liquified like Wax, with a gentle Heat. The oftener this Impregnation is repeated with fresh Vinegar, and the Matter dried, the more fixed it becomes in a small Fire, so as not to smoke, but easily run. If now it be committed to a moderate Heat, and afterwards suffered to cool, but, while it remains fluid, it be poured into another cold Vessel in the cold Air, it strongly coagulates in the pouring, and concretes into fine Threads, like Cobwebs, perfectly resembling silver Thread, and affording a very agreeable Sight. This was published as a Secret by a Jesuit, though somewhat disguised in the Delivery.

4. As soon as this Body, coagulated into Threads, is exposed to a greater Heat, it presently runs again, so that it may be again poured out. And if this Resolution and Inspissation be carefully and patiently repeated, each time separating the Faeces, and then, if the Matter be long, digested with a gentle Heat, till it grows thick, and concretes, a Mass is at length formed, which to the unwary Eye resembles Silver. *Isaac Hollandus* deserves to be read on this Subject, where he speaks concerning the Stone from Lead. The Process, also, may be continued at Pleasure, by those who desire to see unusual Appearances of Bodies.

REMARKS.

The Production is called the Sugar, Salt, Magistery, or Vitriol of Lead. It shews how a fermented vegetable Acid may be combined with Lead, into a Substance soluble in Water. It is astringent, styptic, and presently coagulates the Blood. Being dissolved in Water, it affords the Vinegar of Litharge, good against Inflammations, when externally used. Internally, it is recommended for a safe Remedy against Spitting of Blood, Bleeding at the Nose, making bloody Urine, the Gonorrhoea, the Fluor Albus, and the like, as, also, for a mollifying Remedy against the Acrimony of the Blood; but I never durst make Trial of it, because I never saw it successfully used by others; and because there is scarce a more deceitful and destructive Poison than this Lead, which presently returns to Ceruss, as soon as the Acid is absorbed from it, by any thing it may meet with; whence it afterwards proves an exceeding dangerous and almost incurable Poison to the Body. If the Salt of Lead be gradually distilled in a Retort, and at length urged with a violent Fire, there comes over a flat inflammable Spirit, perfectly changed from the Nature of the Vinegar employ'd; and there remains at the Bottom a Substance like Glass, which, when urged by a strong Fire, penetrates almost all the Vessels that are known, vitrifying all Bodies, and carrying them through with it, except Gold and Silver.

THE SALT OF LEAD WITH SPIRIT OF NITRE.

1. Put an Ounce of granulated Lead, Ceruss, Litharge of Red-lead, into a tall Bolt-head; pour thereon sixteen Ounces of

PLU

Spirit of Nitre, or Aqua-fortis, diluted with ten times their Weight of Water; there arises a great Ebullition with a white Froth; which being over, set the Glass in a little wooden Furnace, to boil for five or six Hours. Let the Liquor rest and cool, then filtre it, and distil to a Pellicule; a nauseous, but not acid, Water will come over. Put the remaining Liquor in a cold Place, and there will shoot white, solid, and very ponderous Crystals, that do not run in the Air, but continue solid; they are of a sweetish Taste, and more austere than those of the preceding Process; the Liquor, also, after the Solution, or both before and after the Crystallization, has a saccharine Sweetness like the Salt. 2. If fresh Aqua-fortis be poured to this Salt, so as to dissolve it, and the Liquor be again inspissated, an Oil of Lead may thus, also, be prepared, which coagulates with Difficulty, but gradually fixes, so as to run like Wax, with a gentle Heat. 3. This Salt, being dried, and thrown upon live Coals, does not take Flame, but crackles violently in the Fire, and flies all around, with great Danger to the By-standers; but, if red, used to fine Powder, it may be melted in a strong Fire.

REMARKS.

Hence we have a new Method of producing a metallic Salt, and its Oil; a sweet Taste from an acid and an insipid Body; a Glass from a Metal; and of shewing, that Spirit of Nitre will not make an inflammable Salt with every Metal, as it does with Silver. The Salt here has the same Virtues as that of the preceding Process, but it is more sharp and astringent.

THE SALT OF LEAD TREATED WITH ALCALIES.

To two Ounces of the crystalline Salt of Lead, made according to either of the two last Processes, thoroughly dried and reduced to fine Powder, add four Ounces of Oil of Tartar per Deliquium; set them in Digestion, where the longer they stand, the better; then add an Ounce of Sal Ammoniac; mix them well, and digest again in a close Vessel; pour back the saline Liquor that comes over in the Digestion, and digest again; which being twice or thrice repeated, dry the Matter thoroughly by a gentle Fire, and expose it to a moist Air, that it may dissolve; dry it again, and distil it in a coated glass Retort, with Degrees of Fire to the highest that Sand will give, into a large Receiver containing a little fair Water. Three Kinds of Matter will thus come over, which seems surprising, while another of a particular Nature, and strangely changed, remains at the Bottom of the Retort.

REMARKS.

Many very particular Things are learned from this Experiment, and such as are pleasant to behold; for the Metal thus successively opened, and dissolved by opposite Salts, then coagulated, and dissolved in the Air, is highly changed, opened, subtilized, divided, and separated from all that is not purely Mercurial, or metallic; and may thus exhibit its pure, metallic, Mercurial Part, separated from the rest, if the Industry of the Operator can reach so far.

THE CALX OF THE VITRIOL OF LEAD.

Take the Vitriol of Lead, made according to the two last Processes but one; dry it thoroughly with a gentle Fire, grind it to fine Powder; put into a glazed earthen Dish; set it over the Fire, and keep it continually stirring with a Tobacco-pipe, till it yields no more Fumes with a great Heat; a fine and almost insipid Powder will thus be obtained, which is another Calx of Lead, made in the moist Way.

REMARKS.

All the Acid which was united with the Lead, in the Form of the Vitriol of Lead, is here again separated from it by the Fire, except that Part, which, intimately adhering thereto, does not appear externally, and was therefore much more closely united with it in this Operation.

THE BALSAM OF LEAD WITH EXPRESSED VEGETABLE OILS.

1. Put granulated Lead, any Calx thereof, Ceruss, Litharge or Red-lead, into a glazed earthen Vessel; add to it twice its Weight of any expressed Oil; then gradually raise the Fire, and the Lead will begin to melt at the Bottom, before the Oil boils; but if the Fire be gradually increased, so as to make the Lead boil, the Body of the Lead, or Calx, will begin to disappear, and mix so intimately with the Oil, as to make a true Balsam, which, by longer boiling, may be brought to a Substance that is solid in the Cold, semi-metallic, will melt in the Fire, and is ductile. 2. If instead of Lead or its Calx, we use that Calx prepared in the last Process, or the Salt of Lead, first dried, and treat it with expressed Oil, in the Manner above delivered, the like Balsam will be obtained as from the true Metal, and the Oil.

REMARKS.

P L U

R E M A R K S.

Hence we see, that true and very ponderous Metals may, by the means of Fire, be dissolved in vegetable Sulphur, and so mixed, as to lie perfectly concealed therein: Whence we are often ignorant, whether Metals are concealed in certain Bodies or not; how wonderfully they may be disguised; and how often they may proceed from Matters not thought to contain them, when they have been often falsely supposed to be obtained from them by Transmutation. All these Particulars admonish us to be cautious of the Impositions of the fraudulent Alchemists. These emplastic Preparations of Lead are of Use to strengthen and warm the Parts, whereto they are applied; they, also, discuss, mollify, and absorb acrimonious Humours; in particular, they are excellent for lining Vessels designed to contain Water; for if Red-lead be boiled in Oil to a proper Thickness, and be exactly spread over a Stone Wall made almost red-hot, so as intimately to penetrate and stick therein, it will cause the Wall to resist Water, as well as if it was built with Cement. This Mixture we use to prevent Worm-tubs from leaking.

THE BALSAM OF LEAD WITH DISTILLED VEGETABLE OIL.

Gently dry the Sugar of Lead, prepared according to the third of these Processes; put it into a tall Bolt-head, and add to it four times its Weight of the ethereal Oil of Turpentine; boil it for some time; which is easily done, if the Glass with this Mixture be put into a Vessel, in which Linseed-oil grows just hot enough for the Purpose, which happens long before Linseed-oil of it self will boil: Thus the Oil of Turpentine will almost wholly dissolve the Sugar of Lead, whereby the Balsam is obtained.

R E M A R K.

This Process has the same Use with the former.

THE GLASS OF LEAD.

1. Mix two Parts of Red-lead, with one of clean Sand, reduced to fine Powder, by grinding them long together; then put them into a clean Crucible; set it in the Fire, so that the Matter may melt, and continue in Fusion for some time, till, when examined by dipping a Tobacco-pipe therein, what sticks thereto appears transparent; then pour it out upon a Marble: A brittle, yellow, transparent, inodorous, insipid Mass will be thus obtained, that proves hard in the Cold, and melts in the Fire; whence it is called Glass of Lead. This Matter, when fused in the Fire, passes through all the known Vessels, as Water through a Sponge; and converts almost all Bodies into Glass, with itself in Fusion, carrying them through the Pores of the Vessels, except Gold and Silver. In order to make the Mixture of the Red-lead and Sand run sooner into Glass, some add Nitre, and others Sea-salt, and keep the Crucible in the Fire till the Salt is melted. 2. If the Sugar of Lead be put into a Crucible, and urged with a gentle Fire, successively increased, the Vinegar flies off, and the Matter is so changed, as to run into a yellow Glass, at the same time that wonderful pleasing Colours appear in the middle, like those of the Rainbow, or the Peacock's Tail. 3. If Lead itself be long kept melted in the Fire, it becomes drossy at Top, which increases till the Lead is almost wholly converted into the same kind of Matter; and this, being again urged with a strong Fire, turns of itself into Glass; but this is a laborious Operation, and requires much Curion. The easiest Method appears to be the following. 4. Take four Parts of Red-lead, one Part of Sand, and two Parts of dry decrepitated Sea-salt; grind them together, the longer the better; put them into a close-covered Crucible; melt them together, and suffer the Whole to Rest; the Salt will be found melted in a Glebe at Top, and the Glass below, when the Crucible is broke, and should be separated from the rest, for the Purposes of Metallurgy, where it is extremely useful. 5. These Glasses, being mixed with a little powdered Charcoal, and melted in the Fire, easily turn to Lead again.

R E M A R K S.

We have a wonderful Change of this Metal (by means of Fire and the Discharge of a metallic highly poisonous Vapour) from a perfectly malleable State, to an extremely brittle, and true glassy Matter. Whence we see how wonderfully, and under what various Forms, Metals may lie concealed, and how easily they may again appear. And hence, perhaps, Metals vitrify in the Fire, after being separated from a certain sulphureous Part. This seems to appear from the making of the Glass of Antimony, and other Experiments. And, upon restoring this Sulphur, the metallic Form begins to return, as may be seen in many Instances, especially in Lead. This Glass of Lead is the true Test of Metals, and destroys every thing in the Fire, except Gold and Silver, which it leaves untouched, without any Diminution

P L U

of their Weight. And upon this Foundation depends the whole Art of Assaying and Refining, which is of so great Use in Civil Affairs. Whoever would know more of the Subject, may consult Boyle, Bohn, Homberg, and Geoffroy. But let it be carefully remember'd, that the Fume, the Powder, and all the Parts of Lead are carefully to be avoided, as highly poisonous. Boerhaave's Chymistry.

The burning Spirit and Oil of Lead are obtained from the Sugar or Salt by Distillation; but the Virtues of these inflammable Substances are the same with those of Spirit of Wine, whatever Chymists may pretend to the contrary; for the Spirit is only the Spirit of Wine, concentrated in the Vinegar disengaged by this Preparation, and the red Oil is likewise extracted from the Vinegar.

The mineral Mummy of Lead of Poterius is the Calx of Lead and Quicksilver amalgamated together, made in this manner:

Take of Mercury revived from Cinnabar, two Parts; and one Part of Lead. Amalgamate them together, and continue to shake them strongly in an earthen Vessel over a Charcoal-fire, till the Whole be reduced to a black Powder. Bake this Powder in a Sand-heat, in a glass Matrass, till it turns yellow; and keep it for Use.

This Mummy cures, in a very small time, the Itch, Tetter, and other Diseases of the Skin, cleanses callous Ulcers, and dissolves the Cillius, and dissipates Swellings in the Glands of the Breasts, being mixed in any Ointment or Plaster. It is, likewise, of Service in Cancers, which are not arrived at their last Stage. It must, however, be cautiously and sparingly used, lest the Suppuration prove too great. But, if a Carcinoma, for Instance, be not ulcerated, a Dram of this Mummy, accurately mixed with an Ounce of Emplastrum Magneticum of Angelus Sala, and applied to the Tumor, will gradually dissolve it. But, if there be an Ulceration, then a small Pencil of Lint dipped either in the Mummy alone, or mixed with Powder of Myrrh, is to be thrust into the Ulcer, the Emplastrum Magneticum being applied upon it. By this means the hard Tumor gradually resolves by a gentle Suppuration; and, by proper internal Remedies used at the same time, the Carcinoma is healed. Geoffroy.

PLUMIERIA.

The Characters are;

It has the Appearance of the *Apocynum*, and abounds with a lacteous Juice. The End of the Pedicle passes into a little short monophyllous Calyx, out of which grows the Flower, as in the *Nerium*, but wants the peraloid Crown. The Ovary, which grows in the Bottom of the Calyx, becomes a long, siliquous, double Fruit, when opening lengthwise, and pregnant with a Multitude of Seeds, placed as in the *Apocynum*, but foliated.

Boerhaave mentions but one Sort of *Plumieria*; which is, *Plumieria*; flore roseo, odoratissimo. T. 659. Boerb. Ind. alt. Plant.

Besides the foregoing Sort of *Plumieria*, Miller mentions the five following;

1. *Plumieria flore majore odorato & incarnato.*
2. *Plumieria flore niveo, foliis longis angustis & acuminatis.* *Inst. R. II.*
3. *Plumieria flore niveo, foliis brevioribus & obtusis.* *Inst. R. H.*
4. *Plumieria foliis longissimis, minus succulentibus, flore pallido.* *Houff.*
5. *Plumieria folio latiore obtuso, flore luteo minore.*

This Name was given to this beautiful Species of Plants, by Dr. Tournefort, in Honour to Father Plumier, who was Botanist to the late King of France, and a long time in America, searching after new Plants; and who has published a Catalogue of the Plants, with the new Genuses he constituted; and two Volumes in Folio, with Figures and Descriptions of many of the Plants.

These Plants grow wild in the Spanish West Indies, from whence some of the most beautiful Kinds were brought into the English Settlements in America, and are cultivated in their Gardens for Ornament. The first Sort here mentioned is the most common Kind, which is preserved in the Gardens of the Inhabitants of Jamaica and Barbadoes. The Flowers of this kind nearly resemble those of the red Oleander, but are larger, and have an agreeable Odour. These are produced in small Bunches, at the Extremity of the Shoots, and generally appear in July and August in this Climate; but in the West Indies they flower a great Part of the Year.

The milky Juice of these Plants is very caustic, and reckoned very poisonous. In cutting off any of the Branches of the Plants, if the Knife be not immediately cleaned, the Juice will corrode it, and turn the Blade almost black in a very little time, so as not to be cleaned off again; and, if dropped on Linen, will cause it to wash in Holes, equal to Aqua Fortis. *Miller's Dictionary, Vol. 2.*

PLUMOSUM. An Epithet for a Species of Alum.

PLUTEA, in Avicenna, is a Reduplication of the Dura Mater, as in the Formation of the Longitudinal Sinus.

PLUVIALIS.

P N E

PLUVIALIS. The Plover; of which there are two Sorts. The first is the *Glottis*. Offic. Genl. de Avib. 450. *Limosa Venetorum*. Ejusd. *Pluvialis major*. Aldrov. Ornith. 3. 535. Will. Ornith. 220. Rait Ornith. 298. Charlt. Exer. 114. Jonf. de Avib. 114. *Chloropus Germanis Gull seu Glottis*. Aldrov. 3. 452. **THE GREAT PLOVER.**

The Gall of this Bird is recommended as a Remedy for Disorders of the Eyes. A Jelly of the Flesh is recommended as a good Analeptic, or Restorative.

The other Species is the *Vanellus*. Offic. Charlt. Exer. 113. Mer. Pin. 182. Gesn. de Avib. 692. Jonf. de Avib. 113. *Capella five Vanellus*. Aldrov. Ornith. 3. 523. Rait Ornith. 307. Ejusd. Synop. A. 110. Will. Ornith. 228. *Vaneau*. Bellon. des Oyse. 209. **THE LAPWING, or BASTARD PLOVER.**

This Animal delights in marshy Places; and its Ashes, Heart, and Skin, are us'd for medicinal Purposes. The Ashes drank in Wine, are beneficial in Colics; and, when applied by way of Cataplasm, cure the Bite of a Mad-dog. The Heart alleviates Pains of the Loins, and the Skin is esteem'd good in Cephalalgias. Dale.

They create an Appetite, yield pretty good Nourishment, digest easily, and are look'd upon to be good to provoke Urine, to strengthen the Brain, purify the Blood, and for the Falling Sicknefs.

They are not very solid Food, but soon waste; and therefore Persons accustomed to great Exercises, or hard Labour, are not to use them. Lemery on Foods.

PLUMA, πλῦμα. The Water wherein any thing is wash'd.

PNEUMA, πνεῦμα, in *Hippocrates*, sometimes imports Spirit, Air, or Vapour; and frequently it signifies the Breath, that is, the Air drawn in by Inspiration, and expel'd during Expiration. But *Pneuma*, by the above quoted Author, is often us'd to express a difficult, short, and laborious Respiration.

Pneuma balizomenon, πνεῦμα ἀλιζόμενον, from ἀλίζομαι, to be coarced, crowded, means a railed, dense, and full Respiration. Coac. 339.

Pneuma hosper anacaluteno, πνεῦμα ὥσπερ ἀνακαλυμένον, from ἀνακαλιω, to recal, 1 *Epid. Aeg.* 1. imports a broken Respiration, as when a Person, after a short Expiration, seems to call back his Breath, and to expire with a renewed Force, in order to supply the Defects of the former Expiration. The same is called πνεῦμα πρόσκοπτον (*proscopton*), and προσπλάϊον (*prospelaiou*), an impinging Breath, which strikes in its Passage, and is interrupted by the Elision. It is otherwise described, 2 *Epid.* and Coac. 260. by διπλὴ ἔσω ἀνάκλησις ὅν ἐπεισπνέουσιν, a double Revocation inwards, as in those who fetch their Breath "double;" and by πνεῦμα ἐνεδιπλασιάζετο, "the Breath was "double," that is, as *Forssius* endeavours to explain it, was doubled, or sounded double, by suffering an Elision in its Passage.

Pneuma anapherein, πνεῦμα ἀναφέρειν, from ἀναφέρω, to exalt, is to have a great and full Respiration, or to expire vast Quantities of Breath; which is esteemed a Symptom of an internal Inflammation, 2 *Prorrhet.* Coac. 486. But πνεῦμα ἀνωφερόμενον, in *Lib. de R. V. I. A.* is no more than the Breath discharged by Expiration.

Pneuma anelcomenon, πνεῦμα ἀνελκόμενον, from ἀνέλω, to draw upwards, to raise, or elevate, in 1 *Prorrhet.* 87. imports a Respiration performed with a great Elevation of the Thorax, in such a manner, that even the Scapulae seem to be moved thereby, as *Galen* explains the Word; who, also, takes it to be used by *Hippocrates* in the same Sense as μέλειον and πρόσχειρον, which see below.

Pneuma anespaumenon autica, πνεῦμα ἀνισπασμένον αὐτίκα (from ἀνασπάω, to retract) the Breath immediately or at every Turn retracted, imports an interrupted or intercepted kind of Respiration, which tails on a sudden. It seems to be much the same with the πνεῦμα ὅν ἀσπνώνεις τινος, Coac. 266. and *Prorrhet.* 87. a short and convulsive kind of Respiration, as is usual with those who fetch their Breath under Convulsions.

Pneuma aræon, μετὰ πνεῦμα ἀραιόν, μέγα, is a rare and great Respiration, or a full Respiration perform'd at long Intervals (see *ARÆON*); such as is proper to those who labour under a Delirium, as *Galen* observes, *Lib. 2. de Dyspn.* and *Com.* 1. in *Prorrhet.* and as it is confirmed by many Instances in the first and third Books of the *Epidemics*.

Pneumata asēma, πνεύματα ἄσημα, signifies an obscure Respiration, or such as is small, interrupted, and hardly perceptible; which is usual in Hysterics, a Syncope, and in dying Persons. See *ASEMIOS*.

Pneuma bechodes, πνεῦμα βυχῶδες, from βύζ, a Cough, is a Respiration attended with Coughing, from something derived into the Arteria Coac. 62. 632.

Pneuma dia pollon Chionou, πνεῦμα διὰ πολλῶν χερῶν, as explain'd by *Galen*, *Lib. 2. de Dyspn.* is the same as the *Pneuma aræon* before. The πνεῦμα διὰ χερῶν, 3 *Epid.* imports the same.

Pneuma manoterou, πνεῦμα μανώτερον, from μαρτε, rare, loose, Coac. 211. imports an Alteration from a short, difficult, and turbulent, to a more remiss, rare, and easy Respiration.

Pneuma me a, πνεῦμα μέγα, a great Respiration, Coac. 126. and 290. is when, in breathing, the Thorax is very much enlarged in its Dimensions.

P N I

Pneuma meteoron, πνεῦμα μετέωρον, a sublime and elevated Respiration, imports such a Respiration as is performed with an Elevation of the whole Thorax, and an Erection of the Neck, under a great Straitness and Oppression, as is often the Case in a Quinsy, Peripneumony, Pleurisy, and Asthma. Thus *Galen*, *Com.* 1. in *Prorrhet.* explains the Epithet; and tells us, that πρόσχειρον and φαινόμενον πνεῦμα are used by *Hippocrates* in much the same Sense. And, *Com.* 2. in 3 *Epid.* he further observes, that τὸ μετέωρον πνεῦμα may import, that the Patients under the fore-mentioned Disorders desire and endeavour μέλειον εἶναι, to raise themselves up: Whence he says, μέλειον πνεῦμα, in 3. *Epid.* is the same as ὀρθόπνοια (*Orthopnoia*) in *Prognost.* There is another Signification of μετέωρον πνεῦμα quoted by *Galen* from *Sabinus*, who describes it by τὴν ἀερατὴν ὅτι γηνομένην ἀναπνοὴν, "Respiration performed at the Top of the Nose;" that is, when the Passages for Respiration being almost stopped, the Patient, in drawing his Breath, moves the Pinnæ of the Nostrils, as is the Case with those who are suffocated by a Quinsy, Peripneumony or *Empyema*; or when the Strength is quite exhausted, as in dying Persons. This Sense of the Phrase, tho' criticized by *Galen*, seems to be in some measure, imply'd in that of *Hippocrates*, in 7 *Epid.* where, speaking of the Wife of *Olympiades*, as almost expiring, he says πνεῦμα μετέωρον κατὰ ῥίνα σπώμενον, "Respiration was such as is called sublime, and perform'd "through the Nose." *Galen*, at the End of *Lib. 3. de Dyspn.* proves this μετέωρον πνεῦμα, or sublime Respiration, to be, also, small and quick, or short.

Pneuma minuthodes, πνεῦμα μινυθῶδες, from μινύθω, to diminish, is a small and weak Respiration, *Lib. 2. περὶ γυναικ.*

Pneuma mychthodes, πνεῦμα μυχθῶδες, Coac. 519. and 540. is a broken, and most painful Respiration, which is interrupted in the midst of Expiration, as is observable in the sobbing Respiration of Children.

Pneuma proscopton, πνεῦμα πρόσκοπτον, from προσκόπω, to impinge, 4 *Aph.* 67. is expressed in *Celsus*, *Lib. 2. Cap. 7.* by *Spiritus in Fauibus elusus*, Breath suppressed or intercepted by Elution in the Fauces. This impinging kind of Respiration is explain'd by *Galen*, *Lib. 4. de Loc. affect.* in the following manner: "There is another Species of Dyspnœa, he says, "which is, when the Action of the Thorax is interrupted by a "short Rest, sometimes in Inspiration, and sometimes in Expiration, whether this Symptom proceeds from a spasmodic "Disposition of the Muscles of the Thorax, or from an Abundance of Heat, which constrains the Patient to continue his "Inspiration or Expiration".

Pneuma prospelaiou, πνεῦμα προσπλάϊον, from πλάϊω, to impinge or strike against, *Lib. de R. V. I. A.* is the Breath impinging or interrupted in Expiration, as *Galen*, in his Comment in the Place, explains it.

Pneuma prochiron, πνεῦμα πρόσχειρον, quasi πρόσ χειρῶν, ready at hand, or obvious, is a conspicuous Respiration, such as is the sublime and elevated Respiration accompany'd by an Elevation of the upper Parts of the Thorax and the Scapulae, as may be observ'd in Asthmatic Patients, and those who die of a Suffocation. Hence it appears to be the same as μέλειον. See 1 *Prorrhet.* 25. It is also called φαινόμενον (*phanomenon*) visible, apparent; because the Patients, as *Galen* observes, are plainly perceived, through their Clothes, to move the whole Scapulae, when they draw their Breath.

Pneuma rycnon, πνεῦμα ρυκνόν, is a quick and frequent Respiration, and a kind of Dyspnœa, which in *Hippocrates* is often accompany'd with a Greatness or Smallness of Respiration, as is observed by *Galen*, *Lib. 3. de Dyspn.* See *RESPIRATIO*.

PNEUMATIÆ, πνευματίαι. See **PNEUMATODES**.

PNEUMATICI. An Appellation of certain Physicians, who constituted the Pneumatic Sect. See the **PREFACE**.

PNEUMATOCELE, from πνεῦμα, wind, and κύλη. A Tumor. A flatulent Hernia, or Wind-rupture.

PNEUMATODES, πνευματώδης, in *Hippocrates*, is one who fetches his Breath short and quick, otherwise called *Pneumatis*, πνευμασίας, as in *Lib. de R. V. I. A.* This is the Explication which *Galen*, *Lib. 3. de Dyspn.* gives of the Word; where he also observes, that it sometimes signifies one who has his Belly or Illia distended with Flatulences; and proves it from the fourth of the *Epidemics*. *Pneumatis* and *Pneumatumenos*, πνευμασμένος, are used in the same double Sense. *Forssius*.

PNEUMATOMPHALOS. An umbilical flatulent Rupture.

PNEUMATOSIS, πνευμάτωση. An Inflation of the Stomach; or a Collection of Flatulences in the Stomach.

PNEUMENOS, πνεύμενος. Asthmatic, or breathing with Difficulty.

PNEUMON, πνεύμων. The Lungs.

PNEUMONANTHE. A Name for the *Gentiana, angustifolia, Autumnalis, major*.

PNEUMONICUS. An Epithet for Medicines destin'd to the Lungs.

PNEUMOPLEURITIS. The same as **PLEUROPNEUMONIA PNIOTAIION**, πνιγαλίον. The *Incubus*, or *Ephialtes*.

PNIGITES. Offic. Charlt. Foss. 3. Worm. 5. *Terra Pnigites*, Aldrov. Musc. Metall. 259. Marth. 1592. **BLACK EARTH.**

It is a fat, dense, soft, black, astringent, and very acrimonious Substance, of the Taste of Vitriol. To these Marks *Dioscorides* adds, that in Colour it somewhat resembles the *Eretria Terra*, is cold to the Touch, and so glutinous as to adhere to the Tongue. The same Author says, that it has the same Virtues as the *Cimolia*, only is weaker: Some, he says, sell it for *Eretria Terra*. *Dioscorides, Lib. 5. Cap. 177.*

PNIGMOS, πνιγμός. The same as PNIX.

PNIGOS, πνιγός. A sultry suffocating Heat.

PNIX, πνίξ. Any Suffocation; particularly that which happens in hysteric Fits. With an Addition of the Epithet *Hysteric*, it implies an hysteric Fit.

POA. A Name for the *Gramen*; *pratense*; *majus*; *latiore folio*. See MILIUM.

POCAN. A Name for the *Phytolacca*; *Americana*; *majori fructu*.

POCATSJETTI. H. M. The Name of a small Shrub which grows in *Malabar*. The Leaves powder'd, and sprinkled upon Ulcers, repress luxuriant and fungous Flesh; and, taken internally, they excite a Sweat, and diminish the Paroxysm of an intermitting Fever.

Of the Bark, and Root, powder'd, and mixed with Oil, an Unguent is made, said to be good for the Itch, and other cutaneous Disorders. *Raii Hist. Plant.*

POCO SEMPIE. The Down or Moss growing upon the *Agnus Scythicus*. This is esteemed good for stopping of Blood, if given in the Quantity of six Grains. See AGNUS SCYTHICUS.

PODAGRA, ποδάγρα, from πούς, a Foot; and ἄγρᾱ, a Prey. The Gout in the Feet. See ARTHRITIS.

PODAGRARIA. See ANGELICA. It is, also, a Name for the *Myrrhis*; *folio Angelicæ rugosæ*; *hirsute*.

PODEON, ποδεών, is the prominent part of a Vessel, or Bottle, made of a Skin, by which the Liquor is poured in and out, and which used to be tied with a String, in order to keep in the contained Fluid: Thus (*Lib. περὶ ποδῶν*) πῶς ποδεῶν ἀεὶς, &c. To the Extremity, or prominent part of the Vessel, or Bottle, a Pipe is tied, for introducing the Air, and distending the Intestines, in order for their being washed with a Clyster, in the Cure of the Ileos. *Foefius.*

POERINSII. A Name for the ARBOR SAPONARIA.

POINCIANA. Flower-sence.

The Characters are;

The Calyx is pentaphyllous; the Flower polypetalous, and furnished with numerous Stamina; the Pod is flat, hard, gaping into two Parts, and divided into Capsules, or Cells, containing roundish Seeds.

Boerhaave mentions but one Sort of Poinciana; which is, Poinciana; flore pulcherrimo. *T. 619. Frutex, Pavoninus, five Crista Pavonis.* Breyn. Cent. 1. 61. *Acacia Orbis Americani, altera, flore pulcherrimo.* H. R. Par. *Crista Pavonis.* H. L. *Erythroxylon, Indicum, minus spinosum, Coluteæ foliis, filiquis angustioribus, flore ex luteo & rubro eleganter variegatis.* Par. Bat. Prodr. 333. *Boerb. Ind. alt. Plant. Vol. 2.*

Besides this Sort, *Miller* mentions three more;

1. Poinciana flore luteo. *Houfl.*

2. Poinciana flore rubente. *Houfl.*

3. Poinciana spinosa, vulgo Tara. *Fenil.*

The Seed-pods of the last Sort are used by the Dyers in the *Spanish West-Indies*, for dying of Black; and they are, also, used for making of Ink. The Infusion of these Pods with Galls affords the most beautiful black Ink in the World.

POLEMONIUM.

The Characters are;

The Leaves are alternate, and pinnated; the Flower is monopetalous, rotated or wheel-shaped, and pentapetaloid; the Fruit is round, tricapsular, gaping, and full of oblong Seeds.

Boerhaave mentions four Species of Polemonium; which are,

1. Polemonium; vulgare; cœruleum. *Tourn. Inst. 146. Boerb. Ind. A. 252. Raii Synop. 3. 288. Polemonium. Offic. Valeriana Græca.* Ger. 918. Emac. 1076. Park. Theat. 122. *Raii Hist. 2. 1102. Valeriana Græca quorundam flore cœrulea.* J. B. 3. 212. *Valeriana cœrulea.* C. B. P. 164. *Vulneraria alata Blattariæ flore cœrulea.* Hist. Oxon. 3. 605. GREEK VALERIAN, or JACOB'S LADDER.

This Plant is produced in Woods, and flowers in Summer: The Herb itself, and its Root, are used. The Root, drank in Wine, is good against the Bites of venomous Animals, and Dysenteries. When drank in Water, it is beneficial in Dysurics, and ischiadic Pains. A Dram of it exhibited in Vinegar, proves serviceable to Patients labouring under Disorders of the Spleen: When chew'd, it mitigates Tooth-achs. *Dioscor.*

The Herb is vulnerary. *Sim. Pauli.*

This Plant is so imperfectly described by the Antients, that we are as yet ignorant what it really is; since some of them make it a Species of the Valerian; and others of the Lychnis.

But I have chosen to follow *Tournefort*, who ascribes this Name to this Plant, which is described by *Dioscorides* in the following manner: "The Polemonium is a Plant, with small Branches, pinnated on both Sides: Its Leaves are a little larger and longer than those of Rue; greatly resemble those of Calamint, or Bloodwort; and have Clusters, in which are contained black Seeds, hanging from their Tops." *Dale.*

2. Polemonium; vulgare; album. *T. 146. Valeriana Græca quorundam, flore albo.* J. B. 3. 212. *Valeriana alba.* C. B. P. 164.

3. Polemonium; vulgare; flore variegato. *T. 146. Valeriana Græca, flore ex albo & cœruleo variegato.* H. L.

4. Polemonium; vulgare; foliis eleganter variegatis. *Boerb. Ind. alt. Plant. Vol. 1.*

POLEMONIUM is, also, a Name for the *Lychnis*; *sylvestris*; quæ Been album vulgo. See BEHEN.

POLEMONIUM, *Monspeliensium.* A Name for the *Jasminum*; *luteum*, vulgo dictum bacciferum.

POLENTA. See ALPHITA.

POLETIS SAL. A compound Salt, described by *Actius, Tetrabib. 3. Serm. 1. Cap. 24.*

POLIATER. A Physician in ordinary to a Town.

POLIUM.

The Characters are;

The Leaves are, for the most part, hoary; the Stamina supply the Place of the Galea; the Beard is quinquefid, like that of the Chamædrys; the Flowers grow in Heads, on the Tops of the Stalks and Branches.

Boerhaave mentions ten Species of Polium; which are,

1. Polium; Lavendulæ folio. *C. B. P. 220. Tourn. Inst. 206. Boerb. Ind. alt. 183. Polium alterum. Offic. Polium montanum. Offic. Polium montanum Lavendulæ folio.* Park. Theat. 25. *Raii Hist. 1. 525. Polium Lavendulæ folio flore albo.* Ger. Emac. 635. *Ajuga folio integro.* Rivin. Irr. M. POLEY-MOUNTAIN WITH LAVENDER-LEAVES.

This Plant is found in the Gardens of Botanists, and flowers in June. The Herb is only used, and is said to agree in Virtues with the other Species, though in a lower Degree. *Dale.*

2. Polium; montanum; luteum. *C. B. P. 220. Raii Hist. 1. 525. Ger. 528. Emac. 653. Tourn. Inst. 206. Boerb. Ind. A. 183. Polium montanum. Offic. Chom. Pl. Usu. 352. Polium montanum vulgare.* Park. Theat. 24. YELLOW POLEY-MOUNTAIN.

This Plant is produced in *Provence* in *France*, and in *Spain*: It flowers in June. The Herb is used; and is said to agree in Virtues with the white Poley-mountain. *Dale.*

3. Polium; Lavandulæ folio angustiori. *C. B. P. 220.*

4. Polium; montanum; repens. *C. B. P. 221.*

5. Polium; Pyrenaicum, supinum; Hederæ terrestris folio. *T. 206. An Chamædrys montis Sumani.* J. B. 3. 289.

6. Polium; montanum; luteum; dasyphyllum; serratum; tomentosum. *M. H. 3. 355.*

7. Polium; montanum; luteum; serratis, angustioribus, incanis, foliis. *Barrel. Ic. 34.*

8. Polium; montanum; album; supinum; folio ad suprema crenato; capitulis multis, globosis.

9. Polium; maritimum; supinum; Venetum. *C. B. P. 221. Polium Venetum.* J. B. 3. 300.

10. Polium; Hispanicum; fruticosum; maritimum; Rorismarini folio; flore rubro. *T. 207. Boerb. Ind. alt. Plant. Vol. 1.*

This Plant resists Putrefaction, and with it the Sea-slink is, for that Reason, preserved; because Vinegar and Salt are not thought good enough for the Preservation of so delicious and costly an Animal: This Plant is bitter, and approaches much to the Nature of Germander: It provokes Urine, removes Obstructions of the Menfes, and cures the Jaundice. An Infusion of the Leaves and Flowers is beneficial in lethargic Disorders, and, consequently, in Epilepsies: What the Polium of the Antients was, we know not. This Plant is an Ingredient in various Confections, Opiates, and in the Theriaca. It is said to be beneficial against the Bites of poisonous Animals. *Hist. Plant. adscript. Boerb.*

POLIUM CRETICUM. A Name for the *Teucrium*; *calice campanulato*; *stachados facie*.

POLIUM GNAPHALODES. A Name for the *Gnaphalium*; *maritimum*.

Besides the foregoing Species of Polium, *Dale* mentions the two following,

1. *Polium montanum.* Offic. *Polium montanum album.* C. B. P. 221. Ger. 528. Emac. 653. *Raii Hist. 1. 524. Tourn. Inst. 206. Polium montanum Monspeliacum.* Park. Theat. 24. WHITE POLEY-MOUNTAIN.

This Plant is produced in *Italy* and *France*, and flowers in the Summer: The only Part of it used is the Herb itself, which ought to be chosen recent and odorous: It provokes Urine and

P O L

the Menfes, affifts dropfical and iſteric Patients, and is beneficial in the Bites of venomous Animals. *R. H.* It is, alfo, of an inciding and aperient Quality.

Dioſcorides makes two Kinds of Polium; one of which is the Poley-mountain, which he deſcribes in the following manner: "It is, ſays he, a ſmall white Shrub, nine Inches long, "and full of Seeds; which, on their Tops, bears a ſmall "Head, reſembling a certain Species of Cluſters, or the grey "Hairs of a bald Perſon: This Head has a diſagreeable Smell, "but is ſomewhat ſweet to the Taſte. The other Species of "Polium is more of the Nature of a Shrub, and is not ſo "ſtrong, with reſpect to its Smell, and other Qualities." The above-quoted Deſcription of Poley mountain is ſo ſhort, that Botanifts, in different Countries, have taken it, ſome for one Plant, and ſome for another. *Tournefort* and *Chomel* have given the Poley-mountain, both white and yellow, of *C. B. P.* a Place in the *Materia Medica*. *Herman* and *Rockerus* think, that the white is the *Polium Officinale*; and *Commelin* and *Philip Miller* take the yellow *Polium* to be the *Polium Officinale*. But *Ruppius* takes the *Polium Lavendulæ Folio*. *Pin.* for the *Polium Montanum*. And *Joſeph Miller*, and *Rand.* take the *Polium Maritimum erectum Monſpeliacum* of *C. B.* for the Poley-mountain: Concerning which *Magnol* informs us, that the *Polium montanum album* of *C. B.* is much ſmaller, and not of ſo grateful a Smell. For this Reaſon, tho' the *Polium montanum album* ought to be preferred in the Shops, yet I have not omitted the other Species.

Befides the Species already mentioned, there is another, tho' not ſo frequently found in the Shops: It grows in *Crete*; and, becauſe it is of a more grateful Smell, and more efficacious, than the others, is, therefore, preferable to them. *Dale.*

2. *Polium montanum*. Offic. Mill. Bot. Offic. 352. *Rand.* Ind. Plant. Offic. 69. *Polium maritimum erectum Monſpeliacum*. *C. B. P.* 221. *Raii Hiſt.* 1. 524. *Tourn. Inſt.* 206. *Polium Monſpeliacum*. *J. B.* 3. 299. *Polium montanum minus*. *Park. Theat.* 23. **ERECT, or MOUNTAIN POLEY.**

This *Polium* grows to be about a Foot high, much branched with ſquariſh woolly Stalks, having two ſmall, white, woolly Leaves at a Joint, not above half an Inch long, and ſcarce half ſo broad, blunt-pointed, indented about the Edges towards their Ends: The Flowers grow at the Ends of the Branches, in roundiſh, woolly, thick Spikes, ſmall, and of a white Colour, labiated, but having no Galea, being ſet in white, hoary, five-pointed Calyces. Both Leaves and Flowers have a pleaſant aromatic Scent. It grows in *Italy*, and the Southern Parts of *France*, and flowers in *July*. The Tops and Heads are uſed.

Mountain-poley is opening and attenuating, good for Obſtructions of the Liver and Spleen, helps the Dropſy and Jaundice, provokes Urine and the Menſes, and is good againſt the Bites of venomous Creatures; and is an Ingredient in the *Theſiaca Andromachi*. *Miller's Bot. Off.*

POLLEX. The Thumb. *Pollex Pedis* is the great Toe.

It often happens, that the Nail of the great Toe, on one Side, turns in, and enters the Fleſh, thereby occaſioning violent Pains and Inflammation, ſo that the Patient cannot walk without the greateſt Difficulty. The moſt general Cauſe of this Diſorder is wearing ſtrait Shoes: Whence it is plain, that the propereſt Method of preventing it is to wear Shoes ſufficiently wide and eaſy. If the Nail is already fixed in the Fleſh, let the Patient keep his Foot in warm Water for half an Hour, till the Nail begins to ſoften; and, to make it yield the more eaſily, ſcrape it with a Knife, or Piece of Glaſs; then, gently railing the Nail with the Finger, or a proper Probe, interpoſe, between the Nail and the Fleſh, a little ſcraped Lint, and dreſs with warm Spirit of Wine. This muſt be repeated, till the Pain is removed.

If this Method proves ineffectual, we muſt have recourſe to the Knife. For this Purpoſe, let the Foot be ſome time bathed in warm Water, for the Reaſon already given; then place it upon a Seat, where it muſt be firmly held by an Aſſiſtant: Then let the Operator carefully inſinuate a Pair of ſtrong Nail-ſcissors (ſee *Tab. LVII. Fig. 12. 13.*) under the injurious Part of the Nail, to cut it off; and, if it does not fall off of itſelf, it muſt be extracted by the Forceps. Though the Patient will feel the Operation extremely painful, yet he will ſoon be ſenſible of the Eaſe it has procured him. Let the Part be then dreſſed with ſcraped Lint, or Compreſſes moiſten'd in Oxycerate, or warm Spirit of Wine, or Lime-water; and it may be ſomented twice or thrice a Day, till the Inflammation and Pain ceaſe. In the mean time, the Patient ſhould reſt for ſome Days, till all Danger of the Pain and Inflammation be removed. Sometimes proud Fleſh ſprouts up, which may be ſafely conſumed with burnt Alum. In order to prevent the Nail from growing again into the Toe, and producing the ſame Trouble, *Dionis* recommends, that the Shoes ſhould be made eaſy; and the Nail ſhould be every Month ſcraped ſo thin, with a Piece of Glaſs, or ſharp Knife, that it may not have Strength

P O L

to run into the Fleſh, by the Preſſure of the Shoe. *Heiſter's Surgery.*

POLLINCTURA. The embalming of dead Bodies.

POLLUTIO. An Incontinence of the ſeminal Juices; a Species of **GONORRHOEA**; which ſee.

POLPHOS, *πολφός*. A Bulb, or bulbous Root.

POLYÆMIA, *πολυαιμία*, from *πολύς*, much; and *αἷμα*, Blood. A Redundance of Blood, or **PLETHORA**.

POLYANTHOS. A Name for the **PRIMULA VERIS**.

POLYANTHUS. A Name for the *Acarna*. See **CARDUUS**.

POLYARCHION. The Name of a Malagma; thus called from *Polyarchus*, its Author. It is deſcribed by *Galen*, *Lib. 8. de Comp. M. S. L. Cap. 5.* and *Lib. 7. de Comp. M. S. Gen. Cap. 7.* From whence *Actius* and *Paulus Aegineta* have tranſcribed it.

POLYCHRESTOS, *πολύχρηστος*. An Epithet for many Medicines, importing their being good, or uſeful for many Diſorders; from *πολύς*, much, and *χρησδς*, uſeful.

The **BALSAMUM POLYCHRESTON** is deſcribed under the Article **BALSAMUM**.

In *Lemery's Pharmacopée Univerſelle*, we find the following Pills deſcribed:

Pilula Polychreſta. Meſue.

— *Polychreſta*. Quercetani.

— *Polychreſta*. Quercetani Reformatæ.

— *Polychreſta Majores*. Meſue.

— *Polychreſta Majores Reformatæ*.

— *Polychreſta Minores*. Meſue.

— *Polychreſta Minores Reformatæ*.

POLYCLONOS. Ramoſe, or abounding with Branches. An Epithet for the *Artemiſia*, Mugwort.

POLYCNEMON. See **CALAMINTHA PALUSTRIS**.

POLYETES ANTIDOTUS. The Name of ſeveral Antidotes deſcribed by *Nicolaus Myreſſus*.

POLYGALA.

The Characters are;

The Leaves are alternate; the Calyx conſiſts of five Leaves, the two larger of them expanded like Wings, and the three leſſer acute; the Flower is monopetalous, anomalous, perforated, with its hinder Part perforated, and its fore Part bilabiated, the upper Lip biſid, and the lower beautifully fimbriated, or fringed: It is furniſhed with eight Stamina, and diſpoſed in looſe Spikes. The Fruit, which is embraced by the quinquephyllous Calyx, as with Wings, is compreſſed, gaping into two Parts, and divided into two Capſulæ, or Cells.

Boerhaave mentions fix Species of *Polygala*; which are,

1. *Polygala*; vulgaris. *C. B. P.* 215. *Tourn. Inſt.* 174. *Boerb. Ind. A.* 236. *Polygala*. Offic. Ger. 448. *Emac.* 563. *Raii Hiſt.* 2. 1335. *Synop.* 3. 287. *Polygala minor*. *Park. Theat.* 1332. *Polygalon multis*. *J. B.* 3. 386. *Flos Ambarvalis vulgo*. *Herm. Cat.* 500. **MILKWORT.**

Gefner, who, in his Letters, calls this Plant *Amarella*, affirms, that an Handful of it, infuſed in a Glaſs of Wine, purges very well, and without any ill Conſequence. *Martyn's Tournfort.*

This Plant is moſt frequently found in dry Meadows, and flowers in *July*. The Herb itſelf is only uſed. Its bitter Taſte proves it to be of an hot and drying Quality: Its Leaves, boiled in Wine, purge Bile, by Stool. *Gefn.*

This is the *Polygala* of the Shops of *England*, and of the modern Botanifts: But that it is the Plant to which *Dioſcorides* gives the ſame Name, neither its Deſcription nor Virtues will ſuffer us to believe; ſince it has neither the Leaves of the *Lentil*, nor a Power of increaſing Milk, both which are aſcribed to the *Polygala*. *Dale.*

2. *Polygala*; flore rubro; purpureſcente. *H. Eycl. Vern.* o. 6. *P. 11. Fig. 2.*

3. *Polygala*; alba. *Tabern. Ic.* 831.

4. *Polygala*; carnea.

5. *Polygala*; violacea.

6. *Polygala*; fruteſcens; folio Buxi; flore maximo. *Oldenl. T.* 175. *Chamaebuxus*, flore *Coluteæ ex purpura rubefcente*. *C. B. P.* 471. *Anonymo*, flore *Coluteæ*. *Cluſ. H.* 105. *Pſeudo-Chamaebuxus*. *H. Eycl. Vern.* o. 6. *F. 12. F. 3.* *Boerb. Ind. alt. Plant. Vol. 1.*

POLYGALA is, alſo, a Name for ſeveral Sorts of **CORONILLA**; which ſee.

Befides the foregoing Species of *Polygala*, *Dale* mentions the following;

POLYGALA VERA. Offic. *Polygala major Maſſiliotica*. *C. B. P.* 349. *Polygala Valentina maritima*. *Park. Theat.* 228. *Colutea caule Geniſtæ ſungoso*. *J. B.* 1. 383. *Raii Hiſt.* 1. 925. *Coronilla caule Geniſtæ ſungoso*. *Tourn. Inſt.* 650. *Aſtragalus Maſſiboli*. *Ger.* 1059. *Emac.* 1239. **MILK-VETCH.**

This Plant is cultivated in Gardens, and flowers in Summer. The only Part of it uſed is the Herb itſelf, which, according

to *Dioscorides*, increases the Quantity of Milk, if drank in some proper Liquor.

The *Polygala* was so common and well-known a Plant among the *Greeks*, that *Dioscorides* has only given a very short Description of it, which has laid a Foundation for various Disputes among the Botanists. The *Polygala* here spoken of, seems to be the genuine *Polygala* of *Dioscorides*; because, as *Matthioli* justly observes, it exactly agrees with the Description of that Plant. *Calceolarius* affirms, that he has often found from Experience, that it augmented the Milk of Nurses. Dale.

POLYGALON. A Name for the *Coronilla*; *minima*; and, also, for the *Polygala vulgaris*.

POLYGANON. A Name for the *Polygala*; *vulgaris*; and, also, for the *Onobrychis major*; *filiculis echinatis*, *cristatis*, *in Spica digestis*.

POLYGLOTTA. The Name of a beautiful *Indian* Bird, remarkable for its Song, but of no Use in Medicine.

POLYGONATUM.

The Characters are;

The Flowers are monopetalous, Bell-shaped, tubulated, naked, divided into six Segments, and furnished with six Stamina, which grow out of the Insides of the Divisions. The Ovary, which grows in the Centre of the Flower, produces a long Tube, furnished with a fimbriated Apex; and becomes a soft, globular Fruit, full of roundish Seeds.

Boerhaave mentions seven Species of *Polygonatum*; which are, 1. *Polygonatum*; *latifolium*; *vulgare*. C. B. P. 303. *Tourn. Inst.* 78. *Boerb. Ind. A.* 2. 63. *Polygonatum*, *Sigillum Solomonis*. Offic. *Polygonatum*. Ger. 756. Emac. 903. Raii Hist. 1. 664. Synop. 3. 263. *Polygonatum vulgare*. Park. Theat. 696. *Polygonatum*, *vulgo Sigillum Solomonis*. J. B. 3. 525. **SOLOMON'S SEAL.**

The Root of *Solomon's Seal* is about a Finger thick, white and woody; full of flat, seal-like Impressions, creeping upon the Surface of the Earth, with many pretty large Fibres. The Stalks grow to be about a Foot high; single, and not branch'd; round and slender; clothed with pretty large, oval, nervous Leaves, of a bluish-green shining Colour, set alternately on the Stalks, and inclining all to one Side, and having the Top bowing that way. The Flowers come from the Bottoms of the Leaves, on pretty long Foot-stalks, generally two together; being hollow and cylindrical; of one Leaf; parted, at the Ends, into five Segments; these, also, hang all one Way, and are of little or no Scent. They are succeeded by round Berries, green at first, and black when ripe; divided into three Parts; containing small oblong Seeds. It grows in Woods and Copfes, in divers Parts of *England*, and flowers in *May*. The Leaves and Root are used.

Solomon's Seal is vulnerary and restraining; good to stop all Kinds of Fluxes and Hæmorrhages; helps to consolidate Wounds, Fractures, and Ruptures; especially the Root, which, preserved in Sugar, is commended by *Matthioli*, as of great Service against the Fluor Albus. A Cataplasm of the Root is good to take away black and blue Marks, arising from Contusions. *Miller's Bot. Off.*

The Fruit of the *Polygonatum* is black, and cover'd with a Meal like fresh Plums; which, perhaps, deceived *Cæsalspius*, who affirms it to be whitish.

Fuchs, to accommodate himself to *Dioscorides's* Description of the *Polygonatum*, fancied he found something like the Taste of Pomegranates in this Species. It might be so, perhaps, in *Greece*; but *Galen* found nothing in it, save an unpleasant Bitterness.

The Leaves of our *Solomon's Seal* are insipid. They have something glutinous in them, which gives slight Nauseas. The Roots are sweet, a little acrid, and glutinous; they give a faint red Colour to the blue Paper; and the Leaves more faint. This Plant seems to contain a viscous Phlegm, mix'd with a great deal of Oil. For, by the chymical Analysis, it yields little besides some acid Liquor and Oil; a little Earth, and fix'd, but no volatile Salt.

Schroder affirms, that fourteen or fifteen Berries of *Solomon's Seal* provoke Vomiting; and they say, that one Dram of its Root has the same Effect. Some macerate half an Ounce of it all Night in a Glas of White-wine, and give the Infusion of it to drink, for several Months together, to those that have Ruptures. The Patients never vomit, and find great Relief; especially if the Roots are applied to the Part at the same time. They are very good, also, for all sorts of Contusions. The distil'd Water clears the Face, and beautifies the Complexion. The Decoction of the whole Plant cures the Itch, and the like cutaneous Diseases. *Martyn's Tournefort.*

2. *Polygonatum*; *latifolium*; *vulgare*; *cauliculis rubentibus*.
3. *Polygonatum*; *latifolium*; *maximum*. C. B. P. 303.
4. *Polygonatum*; *latifolium*; *flore duplici*; *odoro*. H. R. Par.
5. *Polygonatum*; *latifolium*; *Hellebori albi solis*. C. B. P. 303.
6. *Polygonatum*; *latifolium*; *minus*; *flore majore*. C. B. P. 303.
7. *Polygonatum*; *angustifolium*; *non ramosum*. C. B. P. 303. *Polygonatum*, *angustifolium*. J. B. 3. 531. *Polygonatum*, *alterum*. Dod. p. 345. *Boerb. Ind. alt. Plant.*

POLYGONUM.

The Characters are;

The Root is creeping, and very fibrous; the Stalks and Branches are very full of Joints. The Calyx is deeply cut into five Segments, which, in their lower Part, are herbaceous; but, above, of a flosculous Colour; when ripe, the Calyx becomes a Capsule of Seed. The Flowers are produced at the Wings of the Leaves, and are conceal'd, in their first Rise, under a very thin Membrane; the Seed is exactly triangular.

Boerhaave mentions two Species of *Polygonum*; which are, 1. *Polygonum*; *latifolium*. C. B. P. 281. *Tourn. Inst.* 510. *Boerb. Ind. A.* 2. 88. *Centinodium*, *Polygonum*. Offic. *Polygonum mas vulgare*. Ger. 451. Emac. 565. Raii Hist. 1. 184. *Polygonum mas vulgare majus*. Park. 443. *Polygonum sive Centinodia*. J. B. 3. 374. **COMMON KNOT-GRASS.**

The Stalks of this Plant recline pretty much to the Earth, being smooth, and finely chaneled, slender, and branched, full of Knots or Joints, at which grow long oval sharp-pointed Leaves, set alternately on short Foot-stalks. In some Plants these will be broader, and more oval, in others longer and sharper; whence Authors have made two Sorts. At the Joints, with the Leaves, grow several small, staminous, blinking Flowers; sometimes of a white, and sometimes of a redish Colour; in each of which grows a small black triangular Seed. The Root is long and large, and strikes deep in the Earth. It grows every-where by Waysides, and in waste Places; flowering in Summer; the Herb is used.

Knot-grass is cooling, drying and binding, a good Vulnerary, and helpful against all Kinds of Bleedings, either external or internal, as against Fluxes; and outwardly applied, is good for Blood-shot, inflamed Eyes. *Miller's Bot. Off.*

This Plant has an herby, glutinous Taste, and a little Acid; it gives a deep Tincture of Red to the blue Paper; it is likely, that the Salt of Knot-grass resembles Alum, but is mixed in this Plant with a little Sal Ammoniac, and a great deal of Sulphur. For,

By the chymical Analysis, it yields a great deal of Acid, Earth, and Oil, a little volatile, concrete, and very lixivial fixed Salt.

Knot-grass is very vulnerary and astringent; the Juice, Ptilan, or Infusion of it in Wine, is given to drink for the Dysentery, Piles, Spitting of Blood, and all Sorts of Hæmorrhages; the Extract has the same Virtues; the Leaves, bruised, cure Wounds. *Martyn's Tournefort.*

2. *Polygonum*; *oblongo*; *angusto*; *folio*. C. B. P. 281. *M. H.* 2. 591. *Boerb. Ind. alt. Plant.*

Polygonum is, also, a Name for several Sorts of *Herniaria*.

Polygonum bacciferum. A Name for the *Ephedra*; *maritima*; *minor*.

Polygonum Cocciferum. See *Coccus* and *KNAWEL*.

Polygonum Germanis. See *KNAWEL*.

Polygonum maritimum. A Name for the *Ephedra*; *maritima*; *major*.

Polygonum minimum. A Name for the *Knawel*; *folio Al-fines*, *glabro*; *flosculis plurimis*.

Polygonum montanum. A Name for the *Paronychia*; *Hispanica*; and for the *Paronychia*, *Hispanica*; *nivea polyanthos*.

Polygonum perenne. A Name for the *Telephium*; *Dioscoridis*.

POLYIDÆ SPHRAGIS. The Name of a Pastil, described by *Celsus*, *Lib.* 5. *Cap.* 20. It consists of scissile Alum, four Drams; Vitriol, two Drams; Myrrh and Aloes, five Drams; of the Heads of Pomegranates, and Bulls Gall, each six Drams: All which, when triturated, are to be mixed with austere Wine.

POLYMORPHOS. Multiform; an Epithet for the *Or Sphenoides*. See *CAPUT*.

POLYNEURON. A Name for Plantain.

POLYOSTEON. A Name for that Part of the Foot which consists of a great Number of Bones.

POLYPHARMACOS. The same as **POLYCIRESTOS**.

POLYPHOROS. An Epithet of Wine, importing strong and generous.

POLYPODES. The same as **MILLEPEDES**.

POLYPODITES. An Epithet for Wine impregnated with *Polypody*.

POLYPODIUM.

The Characters are;

The Plant is not ramous; the Leaf is cur to the very Rib, in a narrow oblong Parts, not adhering to a Pedicle, but with a wide Base embracing the Rib. Ostentumes the Lobes, or Segments, are not divided as far as the Rib, but are continuous, or joined by a leafy Structure. The Fruit grows on each Lobe, in a double Row, parallel to the Rib of that Lobe, and are membranaceous, covered with a thin Pellicle, and surrounded with an elastic crenated Circle, which explicating itself into a strait Line, discharges, with some Violence, angulous Seeds, growing within two very tender Membranes.

Boerhaave mentions six Species of *Polypodium*; which are,

1. *Polypodium*; *vulgare*. C. B. P. 357. Park. 1039. *Tourn. Inst.* 510. *Boerb. Ind. A.* 24. *Polypodium*, *Quercinum*. Offic. *Polypodium*. J. B. 3. 746. Ger. 972. Emac. 1132. Raii Hist. 1. 137. Synop. 45. *Filix Polypodium dicta*. Heiman. Cat. 258. **POLYPODY OR THE OAK.**

This

This is a capillary Plant, consisting only of pretty large, long, unbranched, pinnated Leaves, whose blunt Pinnæ are very finely indented, and grow not directly opposite to one another on the Stalk, but alternately, a little above one another; the Leaves terminate in a sharp Point, having no Pinnæ on the lower Part of the Stalk: On the back Part of each Pinna, come forth the Flowers and Seed, in double Rows of round Tubercles, of a reddish-brown Colour. The Root is slender, and full of small Knots, which appear like the Feet of an Insect, whence it takes the Name of *Polypodium*; it is of a brownish Colour on the Outside, and greenish within, of a sweetish styptic Taste. It grows upon old Walls, and at the Roots of Trees, and in the decayed Bodies of them; that which grows on the Oak, is most esteemed. The Roots only are used.

They are accounted opening, and gently purging; but are rarely given by themselves, but put among those purging Simples, which are stronger; they are supposed to purge bilious, melancholic Humours, and to open Obstructions of the Liver, and to help the Jaundice and Dropsy, and provoke Urine; they are good for the Scurvy, and are frequently an Ingredient in antiscorbutic Diet-drinks. *Miller's Bot. Off.*

The Root, being analysed, yields several acid Liquors, a little urinous Spirit, no concreted volatile Salt, a good deal of Oil, and a moderate Quantity of Earth. The Antients believed this Root was purgative. *Monardes* was the first among the Moderns, who knew that it loosened the Body but very gently. And *Dodonæus* confesses it does not purge at all, unless it is boiled in Cock-broth, with Mallows and Leeks. It sweetens the Blood, and removes Obstructions of the Bowels. It must be used in a dry Cough, when the expectorated Matter is saltish, in the Asthma, Scurvy, and hypochondriac Affections. It is an Ingredient in several Compositions. *Martyn's Tournefort.*

2. *Polypodium*; minus. *An. C. B. P.* 358. *Dod. p.* 464.
3. *Polypodium*, sensibile; aut *Polypodium Virginianum*. *Munt. H.* 289. *Herba viva, foliis Polypodii.* *C. B. P.* 359. *Filix Indica, Polypodii facie.* *Meuzel.*

4. *Polypodium*; Cambro-Britannicum; pinnulis ad margines laciniatis. *Raii H.* 137. *Filix, amplissima; lobis foliorum laciniatis, Cambrica.* *Plukn. Phytogr.* T. 30.

5. *Polypodium*; tenerum minus. *Boerb. Ind. A.* 25. *Dryopteris.* *Offic. Dryopteris Adversariorum.* *Ger. Emac.* 1135. *Dryopteris sive Filix Querna repens.* *Park.* 1041. *Filix Querna.* *C. B.* 358. *Filix minor non ramosa.* *J. B.* 3. 740. *Tourn. Inst.* 537. *Raii Hist.* 1. 46. *Synop.* 48. OAK-FERN.

This Plant, the Whole of which is used, grows in marshy and putrid Places: When triturated with its Roots, it takes Hæmorrhoids off the Body. It is to be apply'd by way of Ointment, and, when the Body is in a Sweat, the Sweat is to be wip'd off, and the Ointment apply'd again. *Dioscor.* It is possess'd of a septic Quality.

Rondeletius affirms, that he has found bad Effects produced by this Plant, when mixed with Medicines instead of *Polypodium*, by some ignorant Apothecaries of *Dauphiné*. I have sometimes found it in the Shops of some Apothecaries under the Title of *Adiantum album.* *Dale.*

6. *Polypodium*; angustifolium; folio vario. *Tourn. Inst.* 540. *Boerb. Ind. A.* 25. *Lonchitis.* *Offic. Aspera.* *Ger.* 978. *Emac.* 1140. *Raii Hist.* 1. 138. *Synop.* 45. *Aspera minor.* *Park.* 1042. *Minor.* *C. B.* 359. *Lonchitis altera foliis Polypodii.* *J. B.* 3. 744. *Lonchitis altera foliis Polypodii, Asplenium sylvestre nonnullis.* *Chab.* 556. *Filix sive Lonchitis altera foliis Polypodii.* *Pluk. Almag.* 152. ROUGH SPLEENWORT.

This Plant grows in moist, woody, rough, and uncultivated Places. The Herb is proper for agglutinating Wounds, without suffering an Inflammation to come on. When drank in Vinegar, it consumes the Spleen. *Dioscor.* The Root is aperient and diuretic. *Boerhaave.*

POLYPOSIA, πολυποσία. A copious drinking of Wine.

POLYPUS, πολύπους. A Name for any Animal possess'd of many Feet. But it is generally apply'd to a large Sea-fish, resembling a Cuttle-fish. It has eight Claws or Legs, which serve it to swim, walk, and convey its Aliments to its Mouth. These Claws, tho' distant from each other, are, nevertheless, joined by a large Membrane, which runs between them. The four middle Claws are the largest, in Bulk surpass a Man's Arm, and are all along adorned with a double Range of Tubercles, like small Horns. The four other Claws are call'd Brachia, Crura, Cirri, and Barba. The Eyes of this Fish are lodged at the Root of two of these Claws, and its Mouth, which is furnished with Teeth, is situated in the Middle. It has upon its Back a long Body, which, like a Rudder, it turns sometimes one way, and sometimes another, according as it intends to steer its Course. Its Flesh is not covered with any apparent Skin, but is spongy or porous, hard, and of difficult Digestion. This Fish is found in the *Adriatic* Sea, and feeds upon Shell-fish, human Flesh, when it can find it, Fruits and Herbs: It, also, loves Oil; it has, like the Cuttle-fish, near its Stomach, a Bladder full of a black or reddish-brown Liquor, which it discharges, when it intends to conceal itself. Its Eggs are like those of the Cuttle fish, but of a whitish Colour. It contains a large Quantity of Oil, Phlegm, and Salts, both of a volatile and fixed Kind. Its Flesh, when roasted and eaten, is good against a windy Colic. *Lemery Traité des Drogues.*

POLYPUS.

That Men in the Flower of their Age, and blessed with a naturally sound and robust Constitution, often die suddenly and unexpectedly, is sufficiently confirmed by Experience. Nor are the Vulgar ignorant, though Physicians cannot often account for the Thing, that there are some chronical and violent Disorders, whose Diagnostics and Prognostics are highly difficult, and which are in themselves so obstinate, as to prove mortal. But, the more frequent these Diseases are, and the more fond People are of knowing their Natures, the more surprising it is, that the genuine Causes of such Effects have so long remained latent, till luckily the modern Physicians began to make Anatomical Dissections of the Persons who have died of such Disorders, with a View to discover the genuine Condition of their Viscera; for Medicine has made more Advances in this present Age, by means of Anatomy alone, than were made in all preceding Ages, in which it was neglected; for as, by dissecting Bodies, many Causes of sudden Deaths, and dangerous Diseases, have been detected, so the most considerable of these are the Coagulations and Concretions of the Blood, firmly impacted in the large Vessels of the Heart and Lungs, and known by the Name of *Polypuses*; which, by intercepting and obstructing the free Circulation of the Blood, are capable, not only of destroying all the Functions, but, also, Life; for which Reason they are with Difficulty cured, and ought to have their fatal Causes in due time prevented, or removed by proper Medicines.

But that we may prove, that such Polypose Concretions have frequently been found, in dissected Carcasses, to be the Causes of Death, and incurable Diseases, we shall enumerate a few Instances of this Kind, from the Writings of modern Authors. Thus *Bartholine*, in *Lib. de Lacteis Thoracis, Cap.* 14. informs us, that in those who died suddenly, he, upon laying them open, found the larger Vessels of the Heart filled with a concreted Blood. This is, also, evinced by *Bonetus*, in *Anatom. Pract. Lib.* 2. *Seç.* 2. *Obs.* 5. where he treats at large of sudden Deaths produced by extraneous Bodies found in the Sinuses of the Heart. And *Fridericus Loffius*, in *Lib.* 1. *Obs.* 15. mentions a Boy of three Years of Age, who, though seemingly robust, and in good Health, yet died unexpectedly in his Mother's Arms: Upon dissecting the Body, the Viscera appeared perfectly sound, so that, besides an highly coagulated Blood in the Ventricles of the Heart, no other Cause of Death could be discovered. *Carolus Fracastorius*, who had many Opportunities of dissecting those who died suddenly, found nothing as the Cause, but Blood concreted and impacted in the Ventricles of the Heart, and in the pulmonary Vessels. And, that many died suddenly from an Infarction of the Vessels, is sufficiently evinced by *Panacoli*, who informs us, that, in the Year 1656, when sudden Deaths raged so much, many were suffocated by too large a Quantity of Blood retained within the Heart; so that, upon laying open the Bodies of these Persons, he hardly found any other Cause for their Misfortune, than a remarkable Infarction of the Vessels. *Johannes Daniel Horstius*, in *Manuduct. ad Med.* informs us, that in a Person who died suddenly, he found a whitish Phlegm in the Left Ventricle of the Heart. And *Riverius*, in *Cent.* 1. *Obs.* 82. tells us, that, in the Left Auricle of the Heart of a Man who died suddenly, he found a thick, compact, and entirely white Matter, resembling boiled Bacon.

From what has been said, it is sufficiently obvious, that in all Ages such Concretions of Blood have been formed in the Heart, and larger Vessels, as have produced sudden Deaths, and other incurable Disorders. But since, in the Writings of the Antients, the Word *Polypus* does not occur, we may reasonably conclude, that the Moderns have bestowed this Name upon such Concretions, because they generally send off many Ramifications, dispersed here-and-there among the adjacent Vessels; but, notwithstanding this Interpretation, it is to be observed, that the true Polypuses are only such Concretions, as consist of a whitish, fibrous, and pretty compact Substance, and are widely different from grumous or coagulated Blood; which, though it may create various violent Disorders in several Parts, especially when lodged in the Heart and Uterus, yet it hardly deserves the Name of a Polypus, but is, for the most part, by Authors called a *Pseudo-polypus*.

We now come to consider, why polypose Concretions are so fatal to Mankind. Now these Concretions are principally the Causes of violent Disorders, and of Death, when their Bulk is so increased, or, which more frequently happens, when they are, either by a slight internal, or external Cause, so removed from their Seat, as to intercept and disturb the free Circulation of the Blood from one Ventricle of the Heart, through the Lungs, to the other; or when, by blocking up the Orifices of the Vessels, they entirely destroy the Circulation of the Blood; for so long as small polypose Concretions only adhere to the Sides of the Vessels of the Heart, and of the other Vessels, they

they do not much retard the Circulation of the Blood; and for that Reason do not manifestly injure the Functions. This is confirmed by Experience, which teaches us, that such Concretions may be formed in the Auricles and Sinuses of the Heart, on account of the various Windings, and fleshy Fibrils, about the Divarications of the Vessels, and, also, in other Parts of the Body, whilst, at the same time, the Blood is, notwithstanding, suffered to circulate freely. Thus *Vesalius*, in *Lib. 1. Cap. 5. de Corporis humani Fabrica*, informs us, that, in the Left Ventricle of the Heart of a certain Man, he found almost two Pounds of glandular, but blackish Flesh, the Heart being extended like the Uterus; and he adds, that though the Patient's Pulse was surprisingly unequal and various, yet he walked about like a sound Person for several Months before his Death, till at length, during the last Weeks of his Life, his Pulse became so greatly intermittent, that, during the Time usually requisite for nine natural Strokes of the Pulse, only two or three could be perceived in him.

We next come to consider what Diseases are produced, obstinately sustained, or disposed to an unhappy Termination, by means of polypose Concretions: Among these, the most considerable are various Disorders of the Breast, such as Pleurifies and Peripneumonies, among the acute kind; and, among the chronic kind, all sorts of Asthmas, the suffocative Catarrh, the Chin-cough, the Phthisis, and a Spitting of Blood: As for this last, it is certain from Experience, that, in consequence of a Stagnation of viscid and congested Blood, it easily disposes to polypose Concretions, which, in their Turn, produce a Spitting of Blood; for if, by means of these polypose Concretions, the free Passage and Repassage of the Blood through the Pulmonary Vessels is disturbed, the Blood must necessarily be accumulated in the capillary Vessels of the Pulmonary Artery; and at last, upon the breaking of some Ramification, expectorated by way of Spit, especially in Persons disposed to an Hæmoptysis. For this Reason it is no unusual thing for Polypose Concretions to be found in dissecting Persons, who have died of Spitting of Blood: Thus, in *Hoffman's Consult. Med. Tom. 1. Sect. 2. Obs. 73*, we have an Instance of a young Man of seventeen Years of Age, who died of a Spitting of Blood, accompanied with a slow Fever; and, upon laying open his Body, there was a callous Concretion found in his Pulmonary Artery. *Bonetus*, also, in *Anatom. Pract. Tom. 1. Lib. 2. Sect. 5. de Sputo Sanguinis*, gives us an Account of the Dissection of a Person who died of a Spitting of Blood, made by *Sylvius* in the Hospital of *Leyden*, in the Year 1664. In both Ventricles of this Person's Heart there was found a thick, fibrous, and, as it were, fleshy Matter, extended into all the Vessels running off from the Heart. But, particularly, such a Concretion, above three Spans long, was extracted from the Left Jugular Vein; but this Matter, to which much grumous Blood adhered, was, in the Ventricles of the Heart, of a considerable Thickness, and, in a singular manner, interwoven with the fleshy Fibres of the Heart, which its Fibrils, as it were, embraced. Besides, in the Middle there appeared a grumous Blood, and it seemed to have minute Vessels. I have, also, seen polypose Concretions in those who have died of a Phthisis. And *Baubine*, as we are informed by *Georgius Horstius*, in *Op. Tom. 1*, tells us in express Words, that he almost always found polypose Concretions in those who died of a Phthisis and Dropsy. The Curious may, with respect to this, consult *Needham de Formatione Fœtus, Cap. 2. Malpighius, de Polypo Cordis*; and *Harderus*, in *Obs. 45, 46, and 47*.

An Asthma, especially that which is of the incurable kind, and on which depends a Dropsy of the Breast, is almost always generated and sustained by polypose Concretions. I have often had Opportunities of dissecting the Bodies of such as have died of this kind of Asthma; and found either Polypuses in the Heart, and Pulmonary Vessels, or a fetid Serum extravasated in the Cavity of the Thorax. Nor are there wanting a sufficient Number of Observations to confirm this. Thus the celebrated *Grævius*, a Physician to the Army, in his *Dissertatio de Asthmate Convulsivo*, informs us, that, upon laying open the Bodies of fifty Soldiers, who died of Dropsies of the Breast, and Asthmas, he found Polypose Concretions in the Ventricles of all their Hearts. *Lancisi*, also, in his Treatise *de Motu Cordis*, gives us the following memorable Case: A Man of twenty-four Years of Age, of a slender Habit, and accustomed to a gross Air, and coarse Aliments, was seized with frequent Anxieties about the Heart, and Faintings, accompanied with a violent Difficulty of Breathing, and a Refrigeration of the Extremities. His Pulse was small and unequal, and his Jugular Veins and Abdomen were surprisingly tumid, till at last he died of a slow Fever. Upon laying open his Body, his Heart was found wonderfully flaccid and small, with polypose Concretions filling both its Ventricles, and the Pericardium firmly adhering to it. More Observations, with respect to that Asthma which is generally accompanied with a Dropsy of the Breast, may be seen in *Diemerbroeck, Anatom. Lib. 2. Cap. 9. Bartholin, Epist. 2. Cent. 4.*

and *Epist. 56. Gent. 2. Harderus, Obs. 56. Louer de Cordis, Cap. 2. Pezoldus, Obs. 58. and 61. Ruysch, Obs. 19. and in the M. N. C. Dec. 2. An. 9. Obs. 174. and Dec. 3. An. 2. Obs. 185.*

A Dropsy of the Pericardium and Thorax not only frequently accompanies an Asthma brought on by polypose Concretions; but, also, dropical Tumors of other Parts of the Body derive their Origin from the same Cause. Hence nothing occurs more frequently in Practice, than to observe a spasmodic and convulsive Asthma, arising from polypose Concretions, succeeded by a cachectic Habit of Body, cedematous Swellings of the Feet, and sometimes an Ascites; for when the Circulation of the Blood, from the Right Ventricle of the Heart, through the Lungs, to the Left Ventricle, is hindered by such a polypose Concretion, the whole Circulation of the Blood, thro' the Vena Cava, must necessarily be rendered slower; and violent Stagnations by this means must be produced here-and-there in the inferior Parts, and particularly in the Liver, which when obstructed or indurated, the Blood begins to stagnate in the Mesentery, and all the Ramifications of the Vena Porta: Whence the Serum, being secreted, regurgitates to the lymphatic Vessels, which, when too much distended, are formed into Hydatids, the Breaking of which produces a fatal Extravasation of Serum. Memorable Observations of this kind occur in *Rhodus, Gent. 3. Obs. 4. and Peyer, in Hist. Anatom. Cap. 6. Wepfer, in his Exercitat. de Apoplexia*, informs us, that he observed fibrous and pituitous Concretions in the Bodies of those, who, during their Lives, had been for a long time cachectic, or often afflicted with Diseases. *Smetius, in Miscel. Medic. Lib. 10.* gives us a singular Instance of an cedematous Tumor in both Legs, arising from a tense and somewhat hard Polypus, and which, reaching as far as the Thighs, formed a full and hard Tumor in the lower Belly between the Pubes and the Navel, and which at last filled all the Region of the Abdomen. *Bonetus*, from *Boyle, Obs. 9.* makes mention of Polypuses in the Hearts of two Women, one of whom died of a Dropsy, and the other of a Cachexy. And *Albinus, in Dissert. de Polypis, Thes. 5.* mentions a memorable Species of Dropsy in a Man for some time afflicted with a Difficulty of Breathing, Palpitations and Anxieties of the Heart, who had Tumors in his Arms, and his Veins tumid, and protuberating into Knots, in consequence of a pretty large Polypus ascending from the Right Auricles of the Heart into the Trunk of the Vena Cava, and sending off Ramifications; but, in such a Situation, the Dropsy infallibly proves mortal.

But, waving the farther Consideration of an Asthma, and of a Dropsy, which often accompanies it, we now come to investigate the other Disorders of the Breast, which arise from polypose Concretions. The most considerable of these may be justly accounted the suffocative Catarrh; for, upon laying open the Bodies of such as have died of this Disorder, polypose Concretions have, for the most part, been found to be the principal Causes of Death, as is obvious from *Bartholin, Cent. 2. Obs. 86. Greiseli, in M. N. C. An. 1640. Obs. 74. and Malpighi de Polypo Cordis*; for the last-mentioned of these Authors informs us, that in all those he had laid open, who died either of an Apoplexy, or of a suffocative Catarrh, he found callous, viscid, and glutinous Bodies in the Heart and Brain, and frequently in both. Nor must we overlook a Palpitation of the Heart, which is, for the most part, and, when of the chronic kind, almost always, produced by polypose Concretions. But, referring the Curious to the Article PALPITATIO, we come to consider those inflammatory and highly acute Disorders of the Breast, a true Pleurisy, and Peripneumony, which often arise from Stagnations of the Blood, produced by polypose Concretions. Thus *Malpighi*, in his Treatise *de Polypo Cordis*, affirms, that the Bodies of pleuritic Persons, when laid open, are found to contain a large Quantity of white Portions of concreted Matter, not only in the Præcordia, but, also, in the Liver and Veins. *Willis*, in his Treatise *de Febris, Cap. 11.* informs us, that, upon laying open the Bodies of those who died of Pleurifies, the Blood has been found concreted into long Portions in the Sinuses of the Heart, and every-where about the Cavities of the Vessels. *Peyer*, also, in his *Exercitat. Anat.* mentions a Man of Sixty, who died of a Pleurisy changed into a Peripneumony; and, upon opening his Body, there appeared in his Heart large and tenacious polypose Concretions, resembling Portions of Fat.

Polypose Concretions prove the Causes of incurable Diseases, not only in the Heart, and annexed Pulmonary Vessels, but, also, in other Parts, especially the Veins, as is obvious from Dissections. Thus various Observations in *Wepfer, Peyer, Willis, Blasius*, and in *M. N. C.* sufficiently evince, that violent Cephalalgias, Apoplexies, and Deliriums, have been excited by Polypuses found within the Jugular Veins, and in the Sinuses of the Brain; but no Part of the Body is more disposed to the Generation of Polypose Concretions, than the Uterus, in whose Veins, on account

of their winding Complication, and the consequent slow Circulation of the Blood through them, such Polypose Concretions are easily formed, which afterwards lay a Foundation for frequent Abortions, immoderate Hæmorrhages of the Uterus, copious Effusions of Serum and Lymph from it, a Dropsy thereof, and Barrenness.

Having thus considered those incurable Disorders, and such as cannot be cured without the greatest Difficulty, which arise from Polypose Concretions, we shall now subjoin some Phenomena, by means of which it may be known, whether these Polypose Concretions are lodged in the Præcordia, where they have their principal Seat. But, among all the Signs which evince this, the most considerable are, a long-continued Palpitation of the Heart, often excited by a slight Cause, such as the Commotions of the Mind, flatulent Aliments, and such as render the Patient collicive; for such is the Nature of these things, that, by disturbing the equable Circulation of the Blood, they produce a greater Impetus thereof to the Heart, where, being preternaturally congested and accumulated, on account of the obstructing Polypus, it cannot find a sufficient Space for expanding itself, but violently distends the Heart, and its Vessels; by which means it produces a violent Anxiety, and convulsive Motion of the Heart, which is called a Palpitation. Immediately after this, arises another Sign, which is, the Inequality and Intermission of the Pulse, often accompanied with Faintings; for as the Pulse is generally the best Circumstance, by which we can judge of the Motion of the Heart, and of the Circulation of the Blood through all the Parts of the Body; so, if it is irregular, or plainly intermittent, it, if other Circumstances concur, lays a Foundation for suspecting, that some Polypose Concretion, by its Bulk, disturbs, or, for some time, intercepts, the due Constriction of the Heart, and other Vessels, on which the Circulation of the Blood depends. Nor must we exclude, from the Signs which manifest a Polypus, a frequent Obstruction of Breathing, without a manifest Cause; a Compression of the Præcordia, in consequence of spasmodic Strictures of the Breast, and, what most generally accompanies this, a fixed Pain about the Heart; for each of these, if they are almost perpetual, are palpable Signs, that the Circulation of the Blood is obstructed by some foreign Body.

We now come to consider Polypose Concretions in a more particular Manner, and account for their Generation and Production. First, then, 'tis to be observed, that all Polypuses are not of the same Texture, Colour, and Bulk; for some are found so solid, hard, and so compacted of Fibres, that they seem to resemble small Tendons; whilst others are soft, composed of mucilaginous and thin Pellicules, and externally covered with a Membrane. Some are so large as to weigh a few Ounces; some, on the contrary, are smaller, and have sometimes many pinguious Parts intermixed with them. That the Colours of Polypose Concretions are widely different, is sufficiently obvious, from the various Denominations given them by Authors, especially those of a pretty antient Date; for sometimes they are represented under the Idea of Fat, which, according to some, is white, and resembles Candle-tallow; and, according to others, of a whitish yellow Colour, resembling that of the heated Marrow of Bones; at other times they are said to resemble Flesh, and at other times other Substances. Polypuses also differ in this, that some of them being rooted in the Right, and others in the Left Ventricle of the Heart, send off more or fewer Ramifications to the adhering Arteries and Veins; as also, in this, that some are by their own Bulk sufficient to prove mortal, by blocking up the Mouths of the Vessels; whilst others only produce that Effect, by being moved out of their Places.

But from sufficiently important Considerations, I am induc'd to think, that the Matter of Polypose Concretions is supply'd by the more weighty, viscid, and fixed Particles of the Chyle and Lymph, which by their Motion are easily united, and so form'd into one Mass, as to form a fibrous and membranous Body. This is sufficiently confirmed by various Experiments, made with respect to the Generation of these Substances, Thus *Ruysh*, that incomparable Anatomist, in his *Thesaur. Anatom.* 6. informs us, that of his own Blood, only by shaking, he formed a kind of spurious Membrane, which was furnish'd with many Stamina or Fibres, and so much resembled a genuine Membrane, that it was universally believed to be the Work of Nature: And in his *Thesaur. Anatom.* 1. n. 3. he tells us, that by strong Conquassation alone, continued for the Space of one Hour, he produced a Polypose Substance from the Blood of a newly killed Sow: Hence, we are enabled to form a distinct Idea of a Polypus; which may justly be defined, a certain solid, fibrous, Concretion, formed of the more viscid Parts of the Lymph, by means of a strong Motion, or Impulse.

Tho' Polypuses are formed in both Sinuses of the Heart, and in the Arteries as well as the Veins, yet 'tis certain from accurate Observation, that they are more easily and frequently formed in the Right Auricle and Ventricle of the Heart, than in the Left; as, also, more commonly in the Veins than in the

Arteries: Nor is this hard to be accounted for, since the Chyle, which, by means of the Subclavian Vein, is convey'd to the Vena Cava, and the Right Ventricle of the Heart, being full of gross Particles, and moving slowly, easily deposits its heavy Parts, by which the *Columnæ* of the Heart being embraced, one Substance, or Body, as it were, is produced. Then the Blood convey'd to the Veins, by means of their too weak contractile Force, circulates more slowly, is of a thicker Consistence, and more weighty, than the arterial Blood: Hence it easily deposits its thick Parts; but especially, when these, not being intimately mixed, cohere slightly, they, by the Force of their Gravity, tend most to the Bottoms and Sides of the Vessels. But it is otherwise with the arterial Blood; for, as this is not only considerably promoted in its Course, by the elastic Motion of the Arteries, but, also, in the Lungs, impregnated with an highly subtil acreo-ethereal Matter, and intimately mixed, by being forced through very minute Vessels, so 'tis by these means rendered more light and red: Hence the Reason is obvious, why the arterial Blood is less fit for the Generation of Polypuses, than that of the Veins.

Not only those advanced in Years, but also Children and Infants are found subject to Polypose Concretions. That such Misfortunes are incident to Adults, is universally allowed; for which Reason we shall here give a few Instances, in which such Polypose Concretions have been found in Infants: Thus *Albinus*, in his *Dissert. de Polypo Cordis*, gives us an Instance of a Polypus blocking up the Auricle of the Heart, in a very young Boy. *Bonetus*, in *Sepulchret. Anatomicum*, Lib. 2. Sect. 11. Obs. 6. mentions pretty large Polypuses found in the Sinuses of his young Son's Heart. *Snell*, in his *Dissertatio de Cordis Polypo*, tells us that in a Boy of six Years of Age, who died of an Atrophy, he found a Polypus in each Sinus of the Heart. *Dorstenius*, in *E.A.C. Dec. 2. An. 3. Obs. 153.* mentions four extraneous Bodies, found in the Left Ventricle of the Heart of a very young Boy; and in *E.A.C. Dec. 3. An. 2. Obs. 18.* an enormous Polypus, found in a Youth, is described. This might be proved by a great Variety of Instances. 'Tis not, however, to be denied, that Adults, and those pretty far advanced in Years, are more disposed to the Generation of Polypuses than those who are younger; for the Blood peccant both in Quantity and Temperature is more easily accumulated, when the Work of Nutrition is over, than when it is carrying on; especially, when, in consequence of numerous and large Vessels, and a diminished Elasticity of the Solids, any one is disposed to a Plethora, addicted to an idle Life, without Exercise, or has the Misfortune of an improper Diet.

We almost always find Men more subject to Polypuses, and the Diseases produced by them, than Women; the Reason of which is, in my Opinion, this, that in the Female Sex, whilst the menstrual Evacuations are duly carried on, the Quantity of Blood is not so easily increased; and, in consequence of the Laxity of the Fibres, and greater Fluidity of the Humours, or a Blood more abounding in Serum, it more difficultly happens, that the gross Particles unite, and form themselves into Concretions. 'Tis, also, to be observ'd, that in marshy Places, and Northern Countries, far more die of Polypose Concretions, than in the hotter Climates: Which, in my Opinion, besides the cold Air, and the more obstructed Perspiration, is principally, to be ascribed to the gross Aliments, such as Sea Fish, coarse Bread, smoked and salted Flesh, from which a tenacious Chyle, full of terrestrial Particles, and consequently a thick Blood, is generated.

We now come to consider the procatartic Causes of Polypose Concretions; the most considerable of which is a Redundance of Blood; for, in consequence of an increased Diastole of the Vessels, under a plethoric State, the Fibres lose their Elasticity; by which means, the Systole of the Vessels is diminished, the Circulation of the Blood surprisingly retarded, and a palpable Foundation for the Cohesion of the terrestrial Particles laid. Besides, in consequence of this, an Obstruction of the Vessels happens; the great Tendency of which to the Generation of Polypuses is sufficiently obvious from an Experiment made by *Laetzi*, in *Lib. de Aneurismatibus*, Propos. 38. where that Author informs us, that with a waxed Thread he tied a certain Ramification of the Iliac Artery of a live Dog; and that, upon cutting the Ramification, without the Ligature, about fifteen or twenty Days after, he found a Polypose Concretion: Nor is it difficult to account for this, since, by making such a Compression, the more tenacious and least moveable Parts of the Blood, being mutually united, begin gradually to adhere to the Sides of the Vessels, till at last their Bulk being increased, they constitute a thick and fibrous Substance, called a Polypus. But not only a Redundance, but, also, a Penury or Scarcity, of Blood lays a Foundation for Obstructions, and consequently for Polypose Concretions. Hence I have frequently observed copious and frequent Hemorrhages succeeded by the same Disorders, which are produced by Polypuses; for since, in consequence of the Distention, the Fibres are rendered more lax, and the Pores larger, they transmit all kinds of thick and viscid Humours, which are fit for generating Polypose Concretions.

As Length or Tenuity of Body disposes to various Diseases, so it, in a particular manner, contributes to the Generation of Polypuses, and all the Disorders arising from them; for, in tall Persons, the perpendicular Ascent of the Fluids is difficult: Hence, the Circulations in all the Parts of the Body become slower, and Stagnations and Obstructions of the Viscera are easily formed, but especially of the Lungs, where the Blood circulating with Difficulty, stagnates in the minute Vessels, and the secreted heavy Parts are, in Process of Time, condensed into a thick Mass. If this Account of the Matter is not sufficient, it may be still farther confirmed by Experience, which reaches us, that excessively tall Persons are not only inferior in Gaiety of Temper, and Strength of Body, to such as are of a lower Stature, but, also, far more subject to the Diseases arising from a slow Circulation, and Stagnation of the Blood, such as Polypose Concretions, a Phthisis, an Asthma, and a Difficulty of Breathing.

But nothing is more injurious to the human Body, or has a greater Tendency to occasion sudden Death, than large Draughts, of cold Liquors, hastily drank after any violent Commotions or Over-heating of the Body. Thus *Galen*, in his Book *de Sanitate tuenda*, justly thinks that such a Practice induces a Cough, and Difficulty of Breathing; weakens the Brain, and excites Defluxions from it; impairs the Strength of the Stomach, and injures the Nerves; for such is the pernicious Nature of Cold, that, by stopping the intestine Motion of the Fluids, it not only coagulates the Blood, but, also, precipitates the terrestrial and gelatinous Parts; Hence 'tis not to be wondered at, if Obstructions, Inflammations, and Polypose Concretions, should be produced; which last may be observed, when Blood flowing warm from the Veins is suffered to fall into cold Water; or, when warm Water, in which such Blood has fallen, becomes cold; for, in this Case, the fibrous and more heavy Part will be separated and precipitated from the other, in a most beautiful manner. Many Instances might be alleged, in which the drinking cold Liquors has suddenly prov'd mortal.

Both Experience and Reason concur to evince how effectually Acids, and spirituous Liquors, contribute to induce violent and dangerous Coagulations of the Humours; for, according to a known Experiment, Blood which is sufficiently fluid, when taken from the Veins, is by an Affusion of any acid Liquor, or rectified Spirit of Wine, forthwith coagulated into an hard Mass. Now none who accurately advert to this Circumstance, can doubt but the same may happen in the human Body, tho' not in the same Time and Manner. But if they should doubt of this, let them remember into what violent and chronical Disorders, arising from Obstructions in the Viscera, such as a Phthisis, a Cachexy, a Dropsy, a convulsive Asthma, and excessive Hæmorrhages, great Drinkers of Brandy, and spirituous Liquors, bring upon themselves.

Nor are we to overlook the Affections of the Mind, especially Anger, Frights, and Sorrow, which lay a sufficient Foundation for Polypuses, and the Disorders arising from them. Without making a curious Inquiry into the latent Causes of so singular an Effect, we shall only give some memorable Instances of the Facts. Accordingly, the celebrated *Malpighi* gives us an Account of a Patient, otherwise sufficiently robust, who, by means of a Fright, was seized with a great Inequality and Obscurity of the Pulse, especially in the Left Wrist, without any Fever, and a recurring Difficulty of Breathing. But soon after he expectorated by Spit, sometimes a Portion of red Blood, and at other times a large Quantity of small white Portions of Matter, not unlike Polypuses. But afterwards his superior Parts became turgid, and he was suffocated by the Redundance of confined Blood. *Riverius*, also, in *Cent. 4. Obs. 2.* gives us an Instance of a certain Man of Distinction, who, having the Misfortune of a sudden and unexpected Fright, complained of a violent Tremor of his Heart, a Difficulty of Breathing, together with an unequal and intermittent Pulse, till he soon after died; when, upon laying open the Cavity of his Breast, the Heart, and larger Vessels, were full; and in the Left Ventricle of the Heart were found round Caruncles, resembling the Substance of the Lungs, the largest of which, approaching to the Size of an Hazel-nut, blocked up the Mouth of the Arteria Aorta.

Nor must it be forgotten, that the preposterous Methods of curing violent Hæmorrhages, and intermittent Fevers, by Astringents, Opiates, Chalybeates, and even the Peruvian Bark, greatly contribute to bring on violent chronical, and even incurable Disorders, which are produced and supported by Polypose Concretions. And I can, after a Practice of more than fifty Years, affirm, that I have known more Mischief done by no Medicines, than by the unseasonable and incautious Use of these; since I have seen, not only acute and mortal Disorders, such as Apoplexies, Epilepsies, and suffocative Catarrhs, but, also, long and chronical Disorders, such as a Phthisis, a convulsive Asthma, hypochondriac and hysteric Disorders, violent Hæmorrhages, slow and hectic Fevers, pro-

duced by this means. If we inquire whence so many Misfortunes arise, it is to be observed, that the Cause of these terrible Disorders is principally to be sought for, in the slow and retarded Circulation of the Blood and Humours through the minute and capillary Vessels of the Body; for, by this means, the natural Secretions and Excretions, which are, also, made through minute Emunctories, composed of subtile Vessels, are surprisingly retarded: Hence arise various Stagnations in different Parts, Infarctions and Indurations of the Viscera, together with a large Train of other Symptoms. Now if a Physician, in such a State where there is already a Thickness of the Blood and Humours, and a slow Circulation, or where violent Spasms strongly compress the Vessels, should exhibit astringent and in-crassating Medicines, or even those of the sedative Kind, he must necessarily do his Patient a considerable Injury, by rendering the Disorder more terrible. This happens the more infallibly, if the preposterous Use of these Medicines is too long persisted in: Nor can it be doubted, that such Polypuses as may prove the Causes of incurable Diseases, may be produced by these means; and I have had Opportunities, in many Diseases arising from this preposterous and empirical Method of Cure, sometimes of prognosticating Polypose Concretions, from pretty certain Signs; and sometimes of seeing them, in dissecting such Patients after Death.

Thus we have consider'd the principal Causes which concur to the Generation of Polypuses: And, with respect to the other Causes, as they rarely occur, so they may be easily reduced to some one or other of those already mentioned.

The C U R E.

So obstinate are most Persons, that they rarely think of attacking the Beginning of Diseases, but call for the Physician, and the Assistance of his Art, when, their Disorders being increased by Delay, they have a near Prospect of Death: But, by this means, they only hasten the fatal Day, which, by a speedy Use of proper Medicines, might have been totally averted. Persons afflicted with polypose Concretions are the more culpable in this respect, since it is certain from Experience, that their Cure is, at best, difficult and dubious, and, when the Disorder is of long Standing, absolutely impossible; for, if any Assistance is to be expected in those Diseases arising from an intercepted Circulation by means of Polypose Concretions, great Expedition is absolutely necessary: And the principal Intentions of the Physician ought to be to hinder the Generation of such Concretions, and to prevent their Increase, and injurious Effects, where they are already present.

First, then, in order to prevent the Generation of Polypose Concretions, our principal Care ought to be, to dilute and resolve the inspissated Blood, and duly to diminish its Quantity in plethoric Habits. In order to obtain this End, nothing is of more Importance than a right Regimen, and Method of Living; for which Purpose let their Diet be spare, slender, and moistening; and let the Patient abstain from all hard, acid, saline Aliments, and such as afford much Nourishment: Let his Drink be of a proper Quality, and very thin. For this Purpose he may very commodiously use small and pure Beer, or Spring-water, either alone, or mixed with a due Quantity of Wine, or a Decoction prepared of mild and aperient Ingredients; among which the most considerable are the Roots of Vipers-grass and Sarsaparilla, together with *China* Root, and the Bark of Sassafras-wood; for, by these means, the Purposes of Dilution and Resolution will be excellently obtained. To these Measures let the Patient, also, add frequent Exercise, by which the Fluidity and equal Circulation of the Blood through all the Parts are greatly promoted. But all Persons, especially those of fat and plethoric Habits, ought carefully to guard against violent Exercise suddenly begun, since, by this means, too much Blood is projected to the Lungs, where circulating slowly, it is easily coagulated. In order to prevent this, it is expedient forthwith to drink some warm Liquor; which is still the more necessary, if, after the Body has been over-heated by violent Exercise, it is suddenly cooled; or, which is worst of all, if large Quantities of any cold Liquor have been drank. Besides, the Air the Patient breathes ought to be pure, serene, and temperate, neither too hot, nor too cold, nor too moist. But, if the Patient cannot have the Benefit of such an Air, such Insuffusions as promote Perspiration, have an excellent Tendency to attenuate the Fluids, and disjoin the united Molecules.

The Patient ought, also, to guard against violent Affections of the Mind, especially Grief, Anger, and Frights: But if at any time a Change is induced on the Body by these, such things are with all Expedition to be used, as allay violent Commotions, and render the disturbed Circulation of the Blood again regular and equable. Thus, if the bad Effects of a sudden Fright are to be removed, such Medicines are most efficacious as are gently resolvent, and promote a mild Perspiration; because, perhaps, by this means, that Part of the Mass of Blood which

which was beginning to be coagulated, is most commodiously resolved: For this Purpose I always, with great Success, exhibited the *Pulvis Marchionis*, either alone, or with a few Drops of the anodyne Liquor, taken in Cinnamon-water, or Baum-water prepared with Citron-juice and Wine; after which I order some Cups of a warm Infusion to be drank: And this Method I, also, found highly beneficial in those wasted by long Grief. Besides these Measures, in violent Frights, moderate Exercise is greatly to be commended; since by it the Heart is enabled more easily to free itself from the Quantity of Blood congested to it, in consequence of which the Disorder becomes less terrible. Those, therefore, but ill consult their own Advantage, who, immediately after a Fright, betake themselves to a State of Rest, or endeavour to fall into a profound Sleep.

Care must, also, be taken, that the Body be duly soluble; and, if the Patient is costive, Clysters, or balsamic Pills, are, with all Expedition, to be used, in order to remove this Misfortune. Nor is less Care and Prudence requisite, that the other Passages subservient to the Secretion and Excretion of the Humours, be kept free and open, lest, as it generally happens, these being obstructed, the Mass of Blood should be contaminated, and rendered impure: But it ought, in a particular manner, to be the Physician's Care, that no natural Evacuation of Blood, such as the Hæmorrhoids in Men, and the Menfes in Women, be either totally suppressed, or too long retained; for, in this Case, there easily happen dangerous Congestions of Blood to other Parts, which, by the skilful Physician, may be commodiously prevented, by proper Venesection, Pills, and other Medicines of a gently balsamic and temperate Quality. Nor are artificial Evacuations of Blood to be neglected; but these are still more strictly to be regarded, if the Patient is plethoric, and has, by long Custom, render'd them natural to him.

Having laid down these Rules, with respect to Regimen, we must, among the Class of Medicines calculated for inciding and resolving the inspissated Fluids, recommend Salts of a neutral and alkaline Nature, such as the Arcanum Duplicatum, vitriolated Tartar, Nitre, the digestive Salt of *Sylvius*, the aperitive Salt, Oil of Tartar per Deliquium, the Terra foliata Tartari, and the Liquor of fixed Nitre. Among spirituous Preparations, this Intention is answer'd by the Essence of white Burnet, the *Tinctura Antimonii Acris*, and others of a like Nature. But, among all the Medicines, I know none is so powerful in dissolving those Parts of the Blood which are fibrous, and disposed to Concretion, as mineral Waters, especially those which are impregnated with an alkaline Salt, and of a mild and temperate Quality; such as the *Embsen* and *Selteran* Waters, those of *Aix la Chapelle*, but especially the *Caroline* Springs, which, by their Salt, open all the Emunctories of the Body, wash away and evacuate the impure Sordes, and resolve and dilute the thick and viscid Blood.

Having already shewn the Method of preventing Polypuses, we now come to inquire what Measures are to be taken, when there are any Signs of a Polypus already formed in the Heart, or larger Vessels, and by what means its farther Growth may be prevented: It is, therefore, to be observed, that whilst a Polypus is only beginning, and, as yet, pituitous, we are not to lose all Hopes of resolving it, which may be done by alkaline and neutral Salts, which excellently resolve the viscid Humours; by a slender Diet; by a sufficient Quantity of Drink of such a Nature as to dilute the Humours; but, especially, by the *Caroline* Waters; by the prudent Use of which I have known many cured, who had strong Symptoms of a Polypus formed within. But if the Polypus has already degenerated into a fibrous and hard Substance, all possible Care is to be taken, lest, becoming bigger, or, being moved out of its Place, it should totally block up the Vessels, and suddenly destroy the Patient. For answering this Intention, it is of the greatest Importance to prevent a Redundance of Blood, and to preserve its Fluidity, by the Medicines already recommended for that Purpose. But, when a Difficulty of Breathing arises from a Polypus, we must by no means use Venesection in the Arm, since, by that Practice, a greater, and even a suffocative Congestion is produced. Besides, let the Patient avoid all spirituous Liquors, too much Exercise, and Perturbations of Mind, all which, partly by coagulating the Blood, and partly by throwing it into too violent Commotions, render the Disorder worse.

We shall now subjoin some Cautions with respect to the Treatment of Hæmorrhages, and Intermittent Fevers. We have already shewn how faulty Physicians are in this respect; for which Reason I sincerely advise, that, in stopping Hæmorrhages, the Physician would not attempt the Cure by Astringents alone, but rather by a proper Evacuation of Blood, and gently anodyne Medicines; as, also, by Frictions of the inferior Parts, to restore the equable Circulation of the Blood. With respect to the Cure of Intermittent Fevers, the greatest Care is to be taken, that they be not too soon suppressed; for which Reason it is ex-

pedient prudently to use gently aperient and evacuating Medicines; to which we may commodiously subjoin, and even interpose, resolvent, temperating, and corroborating Medicines. *Hoffman.*

POLYSARCIA, *πολυσαρκία*, from *πολύς*, much, and *σάρξ*, Flesh. Corpulence.

This is a superfluous Increase of Flesh, by the *Greeks* so called, on account of its Excess. It is a Disorder directly opposite to that, in which Nutrition ceases, and in which the Body becomes tabid and consumptive. Too large a Quantity of Nourishment conveyed to the Parts, is the Reason, why an excessive Quantity of Flesh is generated, and the Patient, by that means, oppressed. We may justly reckon this to be a Species of Cachexy; for the Patients are afflicted with several terrible Symptoms, such as a superfluous Quantity of Flesh, an Excess of prominent Fat, Slowness of Motion, Oppression, Weakness, Difficulty of breathing, and Sweating upon the least Exercise; so that the Patient becomes apprehensive of Suffocation, and can hardly wear the slightest Garments. Many Physicians have, therefore, given Rules for diminishing the Quantity of Flesh, or preventing an Increase of the Body. But their Doctrine is refuted by *Soranus*; for, if the Habit of Body is good, a moderate Quantity of Flesh, accompanied with Strength, is rather to be preserved, than destroyed. But the *Polyfarcia* we call a Disorder, which may be justly accounted a Cachexy, and is accompanied with many dangerous Symptoms; for all the Misfortunes, which attend voracious Animals, or those fattened for Use, such as Inflation, Extension, and Prominence of the Body, also, attend those afflicted with a *Polyfarcia*. The like happens in ulcerated Bodies, in which the luxuriant Flesh is either consolidated, or springs up afresh on the Lips of the Ulcers, after it has been removed.

There are two Methods of curing a *Polyfarcia*, the one by preventing too copious Nourishment, and which consists in quick Gestation, and the Use of such mild Aliments, as do not nourish much, or have a Tendency to increase the Body; the other consists in the Observation of certain Rules, and laborious Exercise, in order to induce a Change on the Body: But, for the sake of Distinctness, we shall give more particular Directions with respect to the Cure. It is, therefore, expedient to exercise the Patient much and long, either on Horseback, or in Coach; to order him to sail, to read, and use his Voice; to wrestle, and walk quickly, that his Legs may be the more exercised: He must, also, run, and have the Parts of his Body rubbed with the Hands dry, or with a rough Linen Cloth, and some Sand sprinkled on the Parts; then he is to use various *Pæstrian* Exercises, such as that which the *Greeks* call *κελαδία* and *Choricomachia* (perhaps *χερομαχία*); which Exercises are directed by their respective Masters: Then he is to use what the *Greeks* called *ἐπλομαχία*, that is, a Mock-fighting with Arms: Then he is to use the Exercise of Wrestling, which the *Greeks* called *ἀτεροκοπία*, or *τεταχελισμός*. He is, also, to use the long tractary Machine, called by the *Greeks* *Macro-sparton*, and the *Italians* *Sphere*, and Wrestling; as, also, quick, hard, long-continued, and dry Frictions; for if the Parts are rubbed with Oil, the Hands slip, and the Patient cannot perform his Exercise with due Vigour. The Patient's Body must, also, be exposed to the Sun, a Practice which the *Greeks* call *ἡλιωσις*. Then a Sweat is to be excited by means of a Flame, live Coals, and dry Steams. Sometimes Hot-baths, which diminish the Body, and, at other times, Cold-baths, which condense it, are to be used; for the Bodies of such as have used the Cold-bath are perceived to be thick, and, as it were, testaceous. It is, also, expedient to apply hot Sand to the Body, and to swim in the Sea, or in Medicinal Waters. After Sweating in the Bath, the Body must be sprinkled with Salt, by which the Fleashes of Animals are preserved dry, dense, and free from Withering. Then the Patient is to use what the *Greeks* call *zegma*, (perhaps *smegma*) a Friction of Nitre reduced to Powder; and, after Bathing, Meat and Drink are to be long abstained from; for then the Appetite begins to languish, and its Edge is obtunded by the Delay; the Keeness, also, of the Digestion languishes, when the Pomes, which sustained it, is withdrawn. Drinking before Eating is to be forbidden, and very little is to be drank at all, though the Patient may drink most at Meals; for, by drinking much, the Aliments are rendered fluid, the Flesh softened, and by Digestion, the Food is rendered capable of adhering to the Solids, and, consequently, of increasing the Solids: But if the Patient is afflicted with an insatiable Thirst, he may drink a small Quantity of moderately sharp Wine. But Puls, Alica, Flour, Milk, Nuts, the Brains of Animals, Eggs, tender Fishes, and all pinguious Substances, are to be abstained from; but the Patient may eat Bread that is cold, fermented, and prepared with the Bran; for such Bread nourishes but little, especially if it is old. Dry Aliments are, in a particular manner, beneficial; Pot-herbs, and Fishes of hard Digestion, are to be used; as, also, the drier Sorts of Birds, and wild Aliments, such as Hares, and

and wild Goats ; as, also, Pork long dried in the Salt. The Patient ought, also, to use but one kind of Aliment at a Meal, and keep from sleeping a great while after it ; for, by Watching and Restlessness, the Bulk of the Body is much impaired by Exhalation ; whereas it is fattened, and its Bulk increased, by Sleep. Besides, the Body is, by Sleep, rendered more moist. Cold Liquors are to be drank, and, during the Continuance of the Polysarcia, the Metasyneritic Cyclis is to be begun ; for sometimes the Patient is to use total Abstinence, and sometimes to take but a small Quantity of Aliments and Water, which is to be regularly augmented, as the Situation requires. We are to begin the Cure by Vomiting, the Patient fasting, or by an Exhibition of proper Roots. Then the Patient is to use acrimonious Substances, Things of a neutral Quality, Birds, and wild Animals. These Measures are the more expeditiously to be taken in a few Days, the more severe and violent the Beginnings of every Cyclis are. Diuretics are, also, to be exhibited among other Pot-herbs ; such as Asparagus, Carrots, Parsneps, Smallage, Fennel, Leeks, and other Things of a like Nature ; for by this means a Change may be induced on the Body by the Use of common and ordinary Aliments. We must, also, have a due Regard to the various Symptoms in the Cure of this Disorder. Some Physicians recommend Phlebotomy, purgative Medicines, Clysters, the Use of Venery after Bathing, and before Meals, and on the same Day a small Quantity of Nourishment, and Water for Drink : They, also, recommend Vomiting after Supper. Some, also, as contrary to the *Polysarcia*, recommend Exercising the Body by Pandiculation, after rising out of Bed, which they call *ἀντιπαιδα* ; as, also, the Drinking Night-dew, before the Rising of the Sun. But the Madness and Absurdity of late Physicians is sufficiently obvious ; for, by Phlebotomy, the Strength is impaired, and the Patient's Body rendered flaccid, which the *Greeks* call *πένησις*. Purgative Medicines, such as Clysters, and those above-mentioned, corrupt the Fluids, and induce a bad Habit of Body by the *Greeks* called *Cachexia*. Venery, also, renders the Patient effeminate, and destroys his Strength. Some, also, order Bathing twice a Day, and Sleep before Meals ; but this is very improper, since Sleep rather renders the Patient fat, than lean. Vomiting, also, after Supper, destroys the Strength ; and though it diminishes the Flesh, yet it fills the Head with Fumes, disturbs the Organs of Sensation, renders the Gums putrid, corrupts the Breath, corrodes the Stomach, and renders the Patient disagreeable to himself, which the *Greeks* call *δυσάρεστος*, and which is accompanied with a State of Inequality, resembling that of Fevers. Besides, Vomiting is improper, and justly to be condemned, because, by corrupting the Juices, it does more Harm to the Body. But if the Patient has eaten too large a Quantity of Aliments, then a Vomit is to be exhibited ; for the Uneasiness arising from the Excess is greater than that produced by the Vomit. Close and violent Application of Mind, also, contributes greatly to the Cure of the Polysarcia ; for which Reason we observe the Bodies of close Students more thin and slender, than those of Persons who lead lazy and indolent Life, whose Bodies are more full and solid. *Cælius Aurelianus. Chron. L. 5. C. 11.*

POLYSOMATICA. The same as POLYSARCIA.

POLYSPASTON, from *πάλω*, much, and *σπάω*, to draw. The Name of a Machine for making Extension, in case of Fractures, or Luxations. See the Article FRACTURA, and the Explication of Table XXIX.

POLYTRICHUM ; see TRICHOMANES.

POLYTRICHUM AUREUM ; see ADIANTHUM AUREUM.

POLYTROPIA. Abundant Nourishment.

POMACEUM. Cyder.

Cyder is the Juice of Apples, made spirituous by Fermentation ; the Apples are gathered in Autumn, when they are ripe ; then they are ground in a Mill, the Juice is pressed out, and left to ferment in Hogsheads.

There may be as many Sorts of Cyder made, as there are different Sorts of Apples. Apples that are commonly eaten, and are of a sweet pleasing Taste, produce Cyder that will not keep ; and therefore others are preferred for this Purpose. These Apples are of a curious Colour, but they have an harsh, bitter, and styptic Taste ; which makes the Cyder pungent, strong, and to keep long. Cyder ought to be fine, of a curious gold Colour, having a pleasant Smell, and a pungent sweet Taste.

Cyder is pectoral ; fortifies the Heart and Stomach ; moistens, and quenches Thirst ; and is looked upon to be good for scorbutic and melancholy Persons. When drank to Excess, it occasions Drunkenness of longer Continuance, more dangerous, and of more pernicious Consequences, than is produced by Wine.

By an exact Analysis of Cyder, a sulphureous Spirit is first drawn from it, and then Phlegm ; afterwards, by the Help of a great Fire, a little thick Oil is extracted, and a Spirit, which is nothing but essential Salt, dissolved in the Phlegm. What

remains will yield a little fixed Salt by Calcination, Lotion, Filtration, and Evaporation.

When the Juice of Apples has not been well purified, it soon corrupts ; because the Dregs, which remain mixed with the Liquor, are small Pieces of the Apples, which are as subject to rot, as the Apples themselves, and give the Cyder an unpleasant rotten Taste. In order to purify it, some use Water-glue dissolved in Wine ; and, to prevent the Cyder from growing sour, they put Mustard into it. Others draw off what is clear, into earthen or glass Bottles, which are afterwards well corked.

Apples of an harsh and bitter Taste are best for Cyder, because they contain much essential Salt, proper for separating the oily Parts from the Dregs. Besides, these Apples supply the Cyder with a sufficient Quantity of tartarous Parts, to hinder the Spirits from evaporating ; and hence this Cyder is stronger, more purgent, and will keep the longer. On the contrary, sweet Apples being deficient in these Particulars, the Cyder made from them quickly dies.

Cyder is good and wholesome, provided it be used with Moderation ; and may be said, in general, to be better for the Health than Wine, because its Spirits are not so impetuous, nor so much agitated, as those of Wine ; and are, besides, detained and moderated by a great Quantity of viscous Phlegm, which still contributes to make this Liquor moistening and cooling. We know by Experience, that most of those who drink nothing but this Liquor, are stronger, more healthy, and look better, than those who drink Wine ; of which Lord *Baron* gives us a remarkable Instance : Of eight old People, says he, some were near, and others above an hundred, who, during their whole Lives, drank nothing but Cyder, and were so vigorous, that they danced and jumped about like young Men.

Cyder, drank to Excess, does not inebriate so soon as Wine ; but the Drunkenness caused by it continues longer, because its Spirit conveys along with it, into the Brain, a great many heavy and viscous Particles, which hinder its sudden Dissipation. These Viscosities, dispersing themselves afterwards, into all the Substance of the Brain, stop the Channels of the Nerves, and oppress the animal Spirits, in such a manner, that they require some time to recover themselves, and to expel that which detain'd them in a kind of Repose and Unactivity. Hence proceeds that Sleepiness after Drunkenness.

By letting the gross Substance of the Apples ferment in Water, a moistening and cooling Liquor, called small Cyder, is made. This Liquor will not produce Drunkenness, and many Women in *Normandy* make it their common Drink.

Of the Juice of Pears extracted and fermented, is made a kind of Cyder, or vinous Liquor, called Perry, which, in Colour and Taste, resembles White-wine. Bitterish and harsh Pears are best for this Purpose. As the Fermentation of both Liquors is the same, and as the Virtues of Perry are nearly allied to those of Cyder, what has been said may be sufficient.

Many other spirituous Liquors may be made of the fermented Juices of several Fruits ; but the greatest Part of these Liquors never become spirituous, as Wine, or Cyder, and will not keep so long.

The Juice of Quinces, after it has been fermented, becomes viscous. It fortifies the Stomach, works by Urine, is good for the Colic, Spitting of Blood, Dysenteries ; and qualifies the Motion of sharp and bilious Humours, which cause Evacuations upwards and downwards. As this Liquor soon grows sour, and decays, they mix Honey, Sugar, or the like, with it, to preserve it.

Ananas is a juicy and delicious Fruit, that grows in the *West Indies*, whose Juice the *Indians* extract, and make excellent Wine of it, which will inebriate. Women with Child dare not drink it, because they say it will make them miscarry. The *Ethiopians*, also, prepare a sort of Wine, called *Sebanfou*, from a certain Fruit that grows among them.

Pliny says, that they made a Liquor in *Egypt*, which was somewhat spirituous, of the Juice of *Sebetes*, which produced good Effects in Persons of a bilious Constitution. The Juice of Jujubes, prepared in the same manner, has, also, the same Virtues.

From some Trees they draw Liquors, which are almost as spirituous and pleasant, as those we make from Fruits. A kind of a large and strait Palm-tree grows in the *Indies*, called *Coquo*, in whose Branches they make Incisions, and extract a vinous Juice, which the *Indians* call *Sura*, or *Taddi*, and from which they distil a good Spirit. They, also, make a sort of Vinegar with this Juice, by exposing it to the Sun : Others boil it upon the Fire, to make a sweet Wine of it called *Orrata*.

The first Juice being drawn out of the Branches of the Tree, there comes out a second, that is not so spirituous as the other, which they suffer to evaporate, in order to make a kind of Sugar of it, which they call *Jagra*.

The Fruit of this Tree supplies them, also, with a sweet and well-tasted Liquor, which is very cooling and moistening.

The Birch-tree yields a Sap, which, being drank, is of an opening Nature. *Van Helmont* values it much for its Virtues in curing the Stone. Several Physicians, also, use it, for the

same Distemper, for the Strangury, and scorbutic Humours.

The Body, Branches, and Root of the Maple yield a sweet and pleasant Sap: This Liquor, Mr. Ray says, is more abounding in cold and rainy Weather, than in any other; whilst the Birch, on the contrary, yields more in hot and dry Weather.

The Root of the Nut-tree, also, yields a Juice, which Boyle and Schroder value much, they having observed it to have produced good Effects in the Gout, and several other Distempers.

Several other Trees supply different Nations with pleasant Drinks. *Lemery on Foods.*

The Countries in England, most celebrated for the Production of Cyder, are, Herefordshire, Worcestershire, and Devonshire. *Musgrave* informs us, that the Devonshire People are very subject to the Gout, which he attributes to the copious Use of strong Cyder. I have sometimes known an habitual Colic removed by an entire Change of Malt Liquor, or Wine, for Cyder, by way of common Drink.

POMAMBRA. Apples of Amber; these are made of odorous Powders, to which Oils may be added; and these Powders, being receiv'd in Wax, liquid Storax, or Mucilage of Tragacanth, with a little Turpentine, to render them tenacious, if it is necessary, and intimately incorporated, by an Addition of a proper Quantity of Rose-water, or some other such Liquor, are to be reduc'd to Balls of any Size, which shall be judg'd most expedient.

They derive their Name from Amber, not because that Substance is always and necessarily an Ingredient in them, but because they have a grateful Smell, and in that respect resemble Amber: Thus, for a Preparation of this Kind, we may take the Odoriferum Crollianum, which is prepar'd in the following manner:

Take of Mace, Cloves, Cinnamon, or the Cassia Lignea, each two Drams; of Musk, Civet, and Gum Arabic, each one Dram; and of Tragacanth dried in a Furnace, two Drams.

Let these two Gums be triturated with the Musk; and, when all the other Ingredients are carefully triturated, mix the Civet with them, and add a sufficient Quantity of Water prepar'd from the Flowers of the Orange-tree; or the Water of Damask Roses, prepar'd with odorous Specifics, and Rose-water, in which has been digested for eight Days a small Quantity of the Carbo Paracelsi, or the Zibetta Occidentalis; all these are to be incorporated together.

The Carbo or Zibetta Occidentalis, so far as we may conjecture from the *Archidoxa* of Paracelsus, is nothing else but human Dung, or Sulphur plac'd in Digestion for some time, till, instead of its fetid Smell, it assumes one highly grateful and agreeable. See *Hartman in Croll.*

This Medicine may, also, be prepared by pulverizing the Mucilage of Tragacanth, dissolv'd in odoriferous Water, and mixing the other Ingredients with it.

This Medicine, when applied to the Nostrils, by its grateful Smell, conveys a brisk Motion to the Blood; and surprisingly comforts the Heart in Apoplexies, Epilepsies, Colics, Suffocations of the Uterus, and Plagues.

A small Quantity of it may be mix'd with express'd Oil of Nutmegs, in order to make a Liniment, to be us'd in the above mention'd Diseases. *Croll.*

Schroder, in his *Pharmacop.* gives three other Formulæ of the Pomambra; but, as they are of little Importance in Medicine, we refer the Reader to that Work without inserting them.

POMATUM UNGUENTUM. Take of fresh Hog's-lard, three Pounds; of fresh Sheep's-suet, nine Ounces; of the Apples commonly called Pome-waters, pared and sliced, one Pound nine Ounces; of the most fragrant Rose-water, six Ounces; of Florentine Orrice-root, grossly powdered, six Drams; let these boil together in *Balneo Marie*, till the Apples are dissolved; then strain without Expression, and keep for Use: Heat it then over again, and wash the Whole with Rose-water.

Almost all the officinal Dispensatories abound with Prescriptions for this Ointment. The Pharmacopœia Regia has one, containing these Ingredients, but crowded with many more; as has the *Augustan* Collection, one yet more loaded; but that, also, gives another from *Amatus Lusitanus*, much more contracted; and from thence, likewise, our College seem'd first to take it, but yet with a farther Abridgment of Superfluities. *Zwelfer* takes great Pains, in his *Animadversions*, to teach the most convenient Manner of Composition, and Mixture of so many things of different Texture. But, as short a Compas as it is reduced to here, seemingly to avoid these Difficulties, the common Practice of the Shops has of late found out a much nearer way; which is by buying it of Persons, who make it their sole Business to beat up fresh Hogs-lard with Rose-water, into a kind of Curd; and scent it with any of the aromatic Oils, most suitable to the Likings of their Customers. *Quincy.*

POMPHOLYGOIDES Frothy

POMPHOLYGERON, *πομφολυγερών*. The Name of a Plaster describ'd by *Paulus Aegineta*, L. 7. C. 17.

POMPHOLYX, *πομφόλυξ*, is a Bubble excited in a liquid Substance, by some flatulent Spirit, or Air, contained therein. Thus *πομφόλυγες* are expounded in *Hesychius*, *αἱ ἐν τῷ ὕδατι γινόμεναι οἰδήσεις, ἢ φουσμήματα ὕδατος*, "Tumors arising on the Water, or Swellings of the Water." Bubbles, *πομφόλυγες*, appearing on the Top of the Urine, indicate a Disorder of the Kidneys, and that the same will be of long Continuance. *Hippocrates*, 7 *Aph.* 34.

POMPHOS, *πομφός*. *Πομφόι*, in *Galen's* Exegesis, are expounded, *ἐπαναστάσεις τῶ δέρματος ἰχθυώδεις τε ἅμα καὶ πλαδαραὶ καὶ ἐρερυθεῖς*, "scaly Eminences or Tumors on the Skin, which are at the same time red, and full of Moisture." In the Words *Galen* seems to have an Eye to that Passage of *Hippocrates*, (*Lib.* 2. *περὶ γυναικ.*) *καὶ ἐν τῇσι κνήμησι πομφόι ἀνίσταται*, "and *Pomphi* arise in the Legs." The Word occurs, also, *Lib.* 2. *de Morbis*, where we read *καὶ κάλαμπιπλάται πομφῶν ὥς ὅτι ἐρίδης*, "and she was full of *Pomphi* [red, watry Tumors], as tho' she had been rubbed over with Nettles."

POMUM. See MALUS.

POMUM AMORIS. See AMORIS POMA.

POMUM ADAMI. A Name for the Limon, *fructu Aurantii*. *Pomum Adami* is, also, a Name for a Protuberance in the anterior Part of the Neck, form'd by the Thyroide Cartilage.

POMUM ARENOSUM. A Name for the GUAJAVA.

POMUM CITREUM. See CITREUM.

POMUM HIERUCHUNTANUM. A Name for the *Solanum*; *spinosum*; *fructu rotundo*.

POMUM SPINOSUM OPUNTIAUTUM. A Name for the *Melocactus*; *Indie Occidentalis*.

POMUM SYLVESTRE. See AGRIOMELA.

PONDO, or PONDUS. A Weight. See DRACHMA and LIBRA.

As it is necessary to be acquainted with the Weights us'd by different Nations, at different times, in order to understand their Practice, I have given Tables of the principal antient and modern Weights; and, after these, Table of their Measures.

PONGA. H. M. *Jaca minor sylvestris Malabarica*. D. *Commelin.* *Tataisba Brasiliensium* Pison. *smilis*. It is a tall evergreen Tree, growing in Malabar, and bearing no Flowers, at least none which are conspicuous; but the Fruit adheres to the Branches in the same manner as that of the *Jaca*; whence the Portuguese call the Tree the wild *Jaca*. The Calyxes are echinated, first green, and afterwards redish, and containing Multitudes of roundish-oblong, acuminate, and redish Seeds.

A Cataplasin prepared of the green Fruits of the Tree bruised, being apply'd to Tumors, potently promotes their Suppuration. Of the Bark and Root boiled in Water, is prepar'd a Fomentation for cedematous Tumors of the Legs, an endemic Disease among the Indians, and call'd by the Portuguese *Pædo S. Thomæ*, which preserves them from an Inflammation. *Rail H. P.*

PONGAM. See MINARI.

PONGELION *sive Perimaram*. H. M. *Arbor Indica siliquosa, Floribus racemosis, pentapetalis, Siliquis foliaceis, ad singulos Flores ternis*. It is a tall large Tree, growing in several Parts of Malabar. The Oil, prepared of the Bark first bruised, and then boiled, being rubbed on the Body, extracts vicious Humours. The Juice which distils from the Tree, being drank with Butter-milk, dissolves Flatulencies. The Fruit, triturated with *Manga*, and mix'd with a Decoction of Rice, being instilled into the Eyes, cures the Cephalalgia and Ophthalmia.

PONNA. H. M. *Prunifera seu Nucifera Malabarica Foliiis Nymphaeae, Fructu rotundo, Cortice pulvinato*. It is a vast Tree, thirty Yards in Height, and four in Thickness, bears ripe Fruit in March and September, and continues fruitful for the Space of three hundred Years; it grows in sandy Places almost everywhere in Malabar.

From the dry'd Kernels of the Fruit they express an Oil, which is used in Lamps, and cures Pains in the Limbs, being anointed therewith. Of the Bark of the Root macerated in Vinegar, they prepare an Extract, which, rubbed on the Head, cures the Cephalæa. The Tear which distils from the Tree, and its Fruit, being collected and exhibited, excites Vomiting, provokes to Stool, and violently purges corrupt Humours both upwards and downwards. *Rail H. P.*

Tsiferou Ponna, H. M. is the Malabar Cornel-tree, with Leaves like those of the *Nymphaea*. This is accounted a smaller Species of *Ponna*, and bears Fruit like that of our Cornel-tree, in Shape, Size, and Substance: This Fruit is eaten by the Natives, and from its Kernels they express an Oil, which is used in their Lamps, but is of no Service in Medicine. *Rail H. P.*

PONNAGAM, H. M. is a tall bacciferous Indian Tree with a smooth tricapsular Fruit, containing in each Capsula a single Seed. It is always cover'd with Leaves, Flowers, and Fruit.

P O P

Of the Leaves and Fruit bruised, with Honey, is prepared a Cataplasm, which, being apply'd, is a sovereign Remedy for the Bite and Stings of Serpents, and other venomous Animals. The Root, bruised, and apply'd in the Form of a Cataplasm to Contusions, dissolves the coagulated Blood, and cures the Part affected. *Raii H. P.*

Pee Tsjerou-Ponnagam, H. M. is a larger Species of *Ponnagam*, which grows to a greater Height than the former; but, in all other respects, is very little different from it. *Raii H. P.*

PONNAM. A Name for the *Senna*; *orientalis*; *fruticosa*, *Sopha diffusa*.

PONS VAROLII. The Name of a sort of Arch in the *Cerebellum*, form'd by two medullary Processes, call'd thus from *Varolius*, the first Observer of it.

PONTAGIA. A Term in *Paracelsus de Tartaro*, importing, as is said, a Mixture of saline Substances with those which are bitter, or styptic.

PONTICUS, an Epithet in *Paracelsus*, expressive of a certain saline Taste, resembling that of Sea-water.

Pontica Vina are acid, feculent, and tartarous Wines.

Ponticum Mel is a sort of poisonous Honey. See *ÆGOLITHRON*.

POPONAX. The same as OPOPANAX.

POPLES. The Ham, or Joint of the Knee.

POPLITEUS MUSCULUS.

This is a small Muscle obliquely pyramidal, situated under the Ham; from whence it has its Name.

It is fixed above by a strong narrow Tendon to the outer Edge of the inner Condyle of the Os Femoris, and to the neighbouring posterior Ligament of the Joint. Thence it runs obliquely downward, under the inner Condyle of the Os Femoris; its flat, and pretty thick, fleshy Body, increasing gradually in Breadth, till it is fixed in the back Side of the Head of the Tibia, all the Way to the oblique Line or Impression observable on that Side.

The Popliteus performs the Rotation of the Leg, when bent, in a Direction contrary to that of the Biceps. The Biceps turns the Leg from before outward; the Popliteus from before inward. This Rotation, therefore, answers to the Pronation of the Radius, by the Pronator Teres; as that made by the Biceps Tibiæ does to the Supination made by the Biceps of the Arm.

This Muscle is commonly reckoned among the Flexors of the Leg; but it seems very ill contrived for such a Function, because of the Obliquity of its Situation, and because its Insertion is so near the Centre of Motion of the Joint. By its Connection with the Capsular Ligament, it may serve to prevent its being catch'd between the two Bones in the Flexions of the Leg. *Winflow*.

POPULAGO. Marsh-marigold.

The Characters are;

The Root is perennial, the Leaves are entire and roundish. The Flower is rosaceous, like that of the Ranunculus, and naked. The Fruit consists of a Multitude of little Sheaths inserted downwards, stellated, and full of many oblong Seeds.

Boerhaave mentions two Species of *Populago*; which are,

1. *Populago*; flore majore. See *CALENDULA Palustris*.
2. *Populago*; flore pleno. T. 173. *Caltha palustris*, flore pleno. C. B. P. 276. *Pseudo-helleborus ranunculoides*, *pratensis*, *rotundifolius*, *multiflex*. M. H. 3. 461. *Boerb. Ind. Plant. Vol. 1.*

This Plant is said to be of a refrigerating Quality, like the *Nymphaea*; but it is really of a very caustic Nature, so that Cattle avoid it, tho' in the greatest want of Grass; but, if they happen to eat it, they are first seized with an Inflammation of the Fauces, Oesophagus, and Stomach, and at last die. Hence it appears to be a very acrimonious Herb, and of the Nature of *Hellebore*. *Hist. Plant. adscript. Boerhaav.*

POPULARIS. Endemial, or Epidemical.

POPULUS.

The Characters are;

The Leaves are roundish. The Flower in the male Tree is amentaceous, and consists of apiculated Leaves; from the squamous Calyx shews forth a long Axis, to which grow on every Side masculine Floscules so disposed, as by their Union to resemble a Cat's Tail; each of these Floscules consists of a thin, caducous Membrane, furnished with an hairy Margin, and, under this of another less caducous Membrane, from which, on the supine Part, arise eight Stamina, furnished with red, oblong Testiculi: This Membrane, when mature, has its Margin indented, and adorned with a lanuginous Fimbria, or Fringe.

Boerhaave mentions five Species of *Populus*; which are,

1. *Populus*; alba; majoribus foliis. *Tourn. Infl. 592. Boerb. Ind. A. 2. 211. Populus alba*. Offic. Ger. 1301. Emac. 1486. Park. Theat. 1410. *Raii Hist. 2. 1419. Synop. 3. 446. Populus alba alex.* J. B. 1. 155. *Populus alba* (*quæ alba ab albedine dicitur*) *majoribus foliis*. C. B. P. 429. THE ABELÉ, or WHITE POPLAR.

It delights in watry Places, and the Bark is of Use both inwardly and outwardly in the Sciatica, Strangury, and Ambustions.

P O R

2. *Populus*; alba; minoribus foliis. C. B. P. 429.

3. *Populus*; nigra. Offic. Ger. 1301. Emac. 1486. C. B. P. 429. Park. Theat. 1410. *Raii Hist. 2. 1419. Synop. 3. 446. Tourn. Infl. 592. Boerb. Ind. A. 2. 211. Populus nigra sive Atyreps*. J. B. 1. 155. THE BLACK POPLAR.

The black Poplar grows frequently to be a large Tree, having a whitish Bark, and smooth shining green Leaves, growing on long Foot-stalks; they are broad and round toward the Bottom, ending gradually in a narrow sharp Point. The Stalks and Leaves have frequently large Swellings or Tumors on them, made by small Insects. The Catkins are long and loose, coming out early in the Spring. It grows by watry Places and Rivers; the Leaves and Buds are used.

The only Use that they are put to, is to make the Unguentum Populeum; but, as the black Poplar is hor, the Ointment cannot receive its cooling Virtue from those Leaves or Buds, but from the other Ingredients which are put in it. *Schroder* says, the Women in Germany use the Buds to make their Hair grow thick and ornamental. *Miller's Bot. Off.*

The Buds of this Tree are used in the Ointment of Poplar; to which *Trazus* adds the Root of Bryony, and the Tops of the Bramble: It is very lenifying, and is used with Success in the Inflammation of the Piles; but a good Quantity of Opium must be added to it. The Tincture of the Buds with Spirit of Wine, is excellent for old Loosnesses, and internal Ulcers; the Dose half a Dram, or a Dram, taken Morning and Evening in a Spoonful of warm Broth. *Martyn's Tournefort*.

The Eyes, or young Buds, gather'd in April, are used in Medicine. It is disputed whether they are of a cold or hot Quality; but the most probable Opinion is, that they are moderately hot. *Dale*.

POPULEON, or POPULNEUM UNGUENTUM.

Take of the fresh black Poplar-buds, a Pound and an half; the Leaves of Violets, and Navelwort of the Wall, each three Ounces; fresh unsalted Hogs-lard, cleared from its Membranes, and washed, four Pounds. Bruise, mix, and macerate these together; and then add the tender Tops of the Bramble, Leaves of black Poppies, Mandrake, Henbane, Nighshade, Lettuce, the greater Houlleek, and the greater Burdock, each three Ounces. Bruise again, and mix all together very well; and then after ten Days standing, pour on them one Pound of Rose-water; after which boil over a gentle Fire, continually stirring with a Spatula, until all the superfluous Humidity is evaporated; then strain and squeeze out with a Press, so as to obtain an Ointment, according to Art.

This is originally ascribed to *Nicolaus*. The Pharmacopœia Regia gives a Prescription of it, as, also, does the *Augustan Dispensatory*; but the latter comes much the nearer to what is here retained. The new College Dispensatory has corrected a Mistake, which the former Editions were liable to, in expressing the Houlleek to be the greater Sort, because the lesser, commonly called Stone-crop, which was liable to be put in its stead, is of a very opposite Quality to the Intention of the Medicine. *Quincy*.

4. *Populus*; tremula. Offic. C. B. P. 429. *Tourn. Infl. 592. Boerb. Ind. A. 2. 411. Populus Libyca*. Ger. 1302. Emac. 1487. Park. Theat. 1411. *Raii Hist. 2. 1419. Synop. 3. 446. Populus Libyca Plinii, æquis Theophrasti*. J. B. 1. 163. THE ASP or ASPEN-TREE.

It grows in Woods, and in moist watry Places; and the Leaves are supposed to agree in Virtues with those of the black Poplar-tree.

5. *Populo similis arbor*; resinosa altera. C. B. P. 430. *Tremabaca*. Ibid. *Boer. Ind. alt. Plant. Vol. 2.*

The Bark of the Poplar is a very good Detergent, and the tender Buds are used by the Women in adorning and promoting the Growth of their Hair; they have, also, an anodyne Virtue, being externally apply'd; for which purpose they are an Ingredient in the *Unguentum Populeum*, so named from them: This Ointment is of excellent Service in the Hemorrhoids, especially if it be prepared with a good Quantity of Opium. The Tincture of the Buds is very good for an inveterate Diarrhœa, and internal Ulcers. The bruised Leaves are by some apply'd with good Success in the Gour; and the Liquor, which is collected in the Cavities of the Poplar, is believed to cure Warts and the Impetigo. *Hist. Plant. adscript. Boerhaav.*

PORCELLIONES. The same as MILLEPEDES.

PORCELLUS INDICUS. The Guinea Pig. The Flesh of this Animal has not much Taste, and is hard of Digestion. Some are of Opinion, that Broth prepared of it is good against Dysenteries, and proper for exciting a Discharge of the Urine. *Lemery des Drogues*.

PORCUS MARINUS. The Sea-hog. This is a Species of Dolphin, or large oblong Fish, whose Nose resembles that of the Land Hog, and it digs up the Earth in the same Manner. This Fish is frequently carried up with the Tide into Rivers, and is very commonly seen at *Roan*, in the River *Seine*. It is of a yellowish Colour and very fat; its Flesh is eaten, but is not very delicious, and is, besides, somewhat hard of Digestion. When the Grease of it is melted, and perfumed with some

P O R

some odorous Plant, it is called the Oil of the Porpoise, or Sea-hog. It is of an emollient, resolvent, and anodyne Quality, and good in Disorders arising from a Coldness of the Humours. *Lemery des Drogues.*

Porcus. Offic. *Porcus domesticus sive Sus.* Raii Synop. A. 92. *Sus.* Aldrov. de Quad. Biful. 937. Gesn. de Quad. 872. Jonst. de Quad. 70. Charlt. Exer. 13. Schw. de Quad. 123. *Mas* Aper, the BOAR. *Famina* Sus, the SOW. *Fætus* Porcellus, a PIG. THE TAME SWINE, or HOG.

The Parts of this Animal, used for medicinal Purposes, are the Lard, the Gall, the Excrement, the Lungs, the Astragalus, and the Bladder. As the Lard is not of a very hot Quality, it is, therefore, made an Ingredient in refrigerating Ointments, and used for alleviating inveterate Pains of the Loins and Joints. *Dioscorides* informs us, that the Gall of this Animal is used with great Success against Ulcers of the Ears, and of all other Parts. It is, also, said to prevent the Growth of the Hairs. The Excrements are of an emollient and discutient Quality, and for that Reason beneficial in Itchings, Exanthematous Eruptions; Corns of the Feet, and other hard Tubercles; the Excrements of this Animal, also, cure the Bites of venomous Animals, and stop Hæmorrhages of the Nose; the Lungs are highly beneficial, if applied to Abrasions of the Skin contracted by the Shoes. The Astragalus is recommended for Fractures of the Bones, as also for Pains of the Neck and Head. The Bladder is beneficial to those who discharge their Urine involuntarily. *Schrod.* It produces the same Effects, when applied to the Pubes, and is said to provoke Urine. *Pliny. Dale.*

There are two Sorts of Hogs, the wild and the tame. Of the tame Hogs, those are the properest for Food, which are neither too old, nor too young, which are large, fat, tender, and have been well fed, as with Acorns, Malt, Beans, Turneps, and the like.

Pork is nourishing Food, and renders the Body soluble; but it is difficult to digest; produces dull, viscous, and gross Humours; and is improper for gouty Persons.

It contains much Oil, volatile Salt, and Phlegm.

It agrees principally, in cold Weather, with young, hot and bilious Constitutions; with those who have good Stomachs, and are used to labour, and exercise; but it has bad Effects upon old, weak, and tender Habits.

When an Hog is about a Year old, he is gelded, and in *Latin* called *Maialis*. He then grows fatter, and the Flesh is more juicy, and better tasted, than before. A Sow is in *Latin* called *Porca*, or *Scropha*, and not so much fed for Food as the Hog, because its Flesh does not taste so well.

A Pig, in *Latin* called *Porcellus*, is esteemed an excellent Dish, and that which is neither too young, nor too old, is most wholesome; when too young, it abounds too much with Humidity; and, when too old, it becomes hard of Digestion.

An Hog is subject to the Measles, Leprosy, and many other Distempers, because it is full of gross Humours, and such as are liable to produce the like Diseases in those who feed upon them.

Pork affords a Food that does not easily waste, because it contains oily, balsamic, and viscous Principles, which easily stick to the Fibres of the Parts, in such a manner, that they are not without Difficulty separated from them. Pork is, also, laxative, because the oily and phlegmatic Principles, with which it abounds, loosen the Fibres of the Stomach and Entrails, and dilute the gross Humours contained in those Parts.

Galen says, that Pork is not only better tasted, than the Flesh of other Animals, but, also, that it is more wholesome. He adds, that it nearly resembles human Flesh, which he proves, in his third Book, and second Chapter, of the Nature of Foods, by an Account of certain Persons, to whom he ordered human Flesh to be presented instead of Pork, which they eat without being able either by Taste, or Smell, to discover the Fraud. Lastly, he assures us, that Pork, when well digested in the Stomach, affords more Nourishment than any other Food; and says, that the Athletes, or Wrestlers, and such as were inured to hard Labour, were never so strong and vigorous, as when they fed upon Pork; and that when those People, who were used to this Food, lived but only one Day upon the Flesh of another Animal, and still continued the same Exercises, they found themselves weaker the next; and when they continued several Days to disuse Pork, their Strength sensibly decayed, and they became lean.

We readily agree with *Galen*, that Pork may be very nourishing and wholesome, for those who are used to Fatigue and hard Labour; because it is durable Food, and not soon wasted. But Pork in general is not wholesome, and ought to be used moderately; for this Animal's Way of Living is lazy and unactive, and the Filth it continually feeds upon, plainly shews, that its Flesh is full of viscous and gross Juices, fit to produce Humours of the same Nature, in those who eat it, to cause Indigestions, and several other Inconveniences.

Some Nations never eat Pork, as the *Jews*, *Arabs*, *Mahometans*, *Moors*, *Tartars*, and others.

If we reflect upon the Distempers Swine are subject to, indisputably from their habitual Way of living, and their noxious

P O R

Juices thence contracted, we may, perhaps, find Reason to admire the Legislator of the Jews, who forbid the Use of it; and to commend the Wisdom of the Eastern Nations, who esteem it their Duty to observe this Prohibition. It is not at all improbable, that the Scurvy, a Distemper to which the Northern Nations are extremely subject, may be excited by the habitual eating of Swines Flesh, especially when hardened with Salt and Smoke.

Aper. Offic. *Schrod.* 5. 268. *Schw. de Quad.* 54. *Aldrov. de Quad. Biful.* 1013. *Gesn. de Quad.* 918. *Jons. de Quad.* 74. *Charlt. Exer.* 13. *Raii. Synop.* A. 96. THE WILD SWINE, or BOAR.

The Parts of this Animal used for medicinal Purposes, are the Lard, the Teeth, the Penis, the Gall, the Excrements, and the Urine. The Lard is possess'd of the same Qualities, tho' in a stronger Degree, with that of the tame Swine. The Teeth are exhibited as a Specific in the Pleurisy, and are said to cure the Quintey. The Penis and Testicles are said to remove Impotence and Barrenness. The Gall discusses strumous Swellings. The Excrements, when dried, are thought beneficial in stopping Vomitings of Blood, and Hæmorrhages, when applied externally. The Urine is a Specific for resolving and expelling the Stone of the Bladder. *Schrod. Dale.*

A wild Boar that is young, fat, well-fed, and tender-fleshed, is best for Food; he ought, also, to be hunted, and well run. This Food is very nourishing, and does not soon waste, but is easier of Digestion than common Pork. It produces gross Humours, and is not good for sedentary and tender Persons.

All the Parts of a wild Boar contain much volatile Salt and Oil. Its Flesh is good principally in Winter, for young People of an hot bilious Constitution, for those that have a good Stomach, and are used to Fatigue.

The wild Boar is so called, because it is of the same Shape and Size with the tame Hog, only that it lives in Woods. It is fiercer, more nimble, and rougher bristled, than the other; and is usually of a black, or dark red Colour: *Pausanias* says he had seen white ones. *Pliny* and other Authors, assure us, that there were no wild Boars in *Candia*, *Africa*, and the *Indies*; and *Ælian* observes, they had none in *Macedonia*. The *Spaniards* have found some in *America*, which were much smaller, had a shorter Tail, and their Feet made otherwise than those of our wild Boars; and their Flesh was also more delicate, and easier of Digestion, than ours; and they found others in some Places with a Pair of Horns on their Heads.

The wild Boar in *Latin* is called *Verres Sylvaticus*, and the Sow *Sus fera* or *Scropha Sylvestris*. *Pliny* says, that, *Servilius Ruffus* was the first who introduced Hunting the wild Boar among the *Romans*.

The Flesh of all wild Boars is not equally good. Those that are pent up in Parks are inferior Food to those that range at large, and feed upon Roots, Swine-bread, Corn, and Fruits.

The wild Boar is not of so moist a Nature as the common Hog, by reason of the Exercise, and different Food it lives upon; its Flesh is, therefore, less viscous, more agreeable to the Taste, and easier of Digestion. This Flesh is very nourishing, because it contains oily and balsamic Juices; but it is proper only for those who are of robust Constitutions, and inured to Fatigue; because, being very compact in its Parts, it requires a strong Stomach to digest it; and as Persons who are used to much Exercise, lose much of their Substance, they must have gross Foods, which adhere to the Parts, and are not so easily spent. *Lemery on Foods.*

Porcus sometimes imports the female *Pudenda*.

PORFILIGON. The Scales which fall from Iron upon being hammered. *Rulandus.*

PORFIRETICUM. A Brass Mortar, or a Rasp. *Rulandus.*

POROCLE, *παροκλή.* A callous Hernia; from *πῶρος*, a Callus, and *κλή*, a Rupture or Tumor.

POROMPHALON, *παρόμφαλον*, from *πῶρος*, a Callus, and *ὄμφαλος*, the Navel. In the Definitions ascribed to *Galen*, it is the Concretion of a Toph, or Callus, in the Navel.

POROPŌEIA, *ποροποιία*, from *πῶρος*, a Pore, or Passage, and *ποιέω*, to make. An Opening, or Reiteration, of the Pores, or Passages.

POROS, *πῶρος*. A Pore, or Passage. See *CURIS*, and *PERSPIRATIO*.

POROS, *πῶρος*. A Toph, or Callus. See *PORUS*.

POROSIS, The Generation of a *Callus*.

POROTICA, Medicines which generate a *Callus*.

PORPHYRA, See *PURPURA*.

PORPHYRIO. A Bird so called on account of its Colour, which resembles that of Purple. It is a Water-fowl, as large as a Cock, of a bluish or diversified Colour, with a large, sharp, and purple-coloured Beak. It has a Comb on its Head; its Legs are long, and its Feet divided into five Claws; its Tail is pretty short, and the Fowl itself feeds upon any Kind of Fish it can catch. Its Fat is of an emollient, resolvent, and anodyne Quality. *Lemery des Drogues.*

PORPHYRITES. Offic. *Worm.* 44. *Charlt. Foss.* 20. *Boet.* 505. **PORPHYRY,** or RED MARBLE.

This

P O R

This is a Species of Marble highly hard, and of a red Colour; it is brought to us from the Confines of *Egypt*, the Red-sea, and *Ethiopia*. It is thought to be possess'd of a Lithontriptic Quality, and to agree in Virtues with the *OPHITES*. The principal Use of Porphyry, in Medicine, is to levigate hard Substances, so as to reduce them to an impalpable Powder. *Dale*.

PORRACEUS. Of the Colour of Leeks.

PORRIFIGI. In Surgery, is the same as *Ficus*.

PORRIGO. A Disorder of the Skin; the same as *FURFUR*. See *LEPRA*.

PORRUM.

The Characters are;

The Bulbs, or Roots, are oblong, narrow, almost cylindrical, and coated; The Leaves grow out of the Coats of the Roots, are plain, and sometimes carinated. The Flower is hexapetalous, as it were Bell-shaped, and adorned with broad and flat Stamina, ending in three Capillaments, the middle of which is adorned with an Apex; the Flowers are disposed in almost globular Bunches: The Ovary becomes a roundish, tricapsular Fruit, full of roundish Seeds.

Boerhaave mentions four Species of *Porrum*; which are,

1. *Porrum*; commune; capitatum. *C. B. P.* 72. *Tourn. Inst.* 382. *Boerb. Ind. A.* 2. 143. *Porrum*. *Offic. Park. Parad.* 512. *Ger.* 138. *Raii Hist.* 2. 1136. *J. B.* 2. 551. **LEEKES.**

Leeks are well known to have long, white, round Roots, with several white Fibres shooting from the Bottom; the Leaves are long and broad, encompassing the Stalk, which grows two or three Feet high, smooth and round, having at the Top a large, round Head, composed of a great Number of small, greenish, purple, six-leaved Flowers. It is sown in Gardens, and flowers in *June* and *July*; they have a strong Onion-like Scent.

Leeks are more used in the Kitchen among Soops, and Broths, than in Medicine; they are warming and attenuating, and good to cleanse the Lungs from rough Phlegm, and to help Shortness of Breath, and Stoppage of the Stomach; they are, likewise, reckoned good against the Bites of venomous Creatures. The Juice of them is used to dissolve the Gums in the *Pilule fatida*. *Miller's Bot. Off.*

2. *Porrum*, commune, capitatum. *C. B. P.* 72. *M. H.* 2. 390. *Capite sphaerico, minori, flosculis, & pedunculis florum, carneis.*

3. *Porrum*, commune, capitatum. *C. B. P.* 72. *M. H.* 2. 390. *Capite sphaerico, maximo, flosculis candidis, pedunculis florum penitus viridibus.*

4. *Porrum*, commune, capitatum. *C. B. P.* 72. *Capite, sphaerico, minori, flosculis albis, in pedunculis penitus viridibus.* *Boerb. Ind. alt. Plant. Vol. 2.*

This Plant contains a fetid, oily, volatile Salt: Whence its Bulb being bruised, causes a Distillation of Tears from the Eyes and Nostrils. For this Reason it is proper in Cases where Heat is required, or where an Excess of Heat is not feared; but is injurious to those who abound too much with Blood, or whose Blood is of too loose a Contexture; as when it is voided by the urinary Passage, by an Haemoptoe, or by the haemorrhoidal Veins. It provokes the Menies, and Urine; and is very good for the Bites of Serpents, and Combuitions. *Hist. Plant. adscript. Boerhaav.*

Besides the foregoing Species of *Porrum*, *Dale* mentions the following.

Porrum vitigineum. *Offic. Ger. Emac.* 176. *Porrum tonsile.* *Ger.* 139. *Allium sylvestre Amphicarpon, foliis Porraceis, floribus, & nucleis purpureis.* *R. Synop. Edit.* 2. p. 230. **VINE-LEEKES.**

They have been observed by Mr. *Lawson*, to grow on the Mountains of *Westmorland*, and to flower in *June*. The Leaves are used.

Dale takes this Plant for the *Ampeloprasum* of *Dioscorides*; the Virtues of which see under the Article *ALLIUM*, from *Dioscorides*, *Lib. 1. Cap.* 180.

PORRUM, or **PORRUS**, in *Fallopia*, is a Species of rough Wart, which resembles the Root of a Leek, on account of a great Number of Filaments on the Surface.

PORTA. See *HEPAR*. The Female *Pudendum* is sometimes thus called.

PORTAIGUILLE. The Name of a Chirurgical Instrument. See the Explication of *Fig. 2. and 3. of Tab. XXVII.*

PORTATILE. In the *Collectanea Chymica Leydensia*, there is a Preparation of Tartar, intituled, *Acetum in Sacco Portatile*.

Take of white Tartar, half a Pound; after it is carefully wash'd and dried, reduce it to a Powder; infuse this Powder in strong Wine-vinegar. Then dry the Powder again, and infuse it a second time in Vinegar. Let these Measures be repeated ten times, and an highly acid Powder will be obtained, which, when dissolved in any Water, renders it acid; and this is called *Acetum Portabile*, or, *Portable Vinegar*. *Collect. Chym. Leyden.*

PORTORARIUM. The *Duodenum*, or the *Pylorus*.

PORTULACA.

The Characters are;

P O R

The Leaves are somewhat thick and succulent; the Calyx is monophyllous, bifid, and closely adheres to the Ovary; the Flower is rosaceous and pentapetalous. The Ovary in the Bottom of the Calyx becomes an oval Vessel, consisting of two Shells, one within the other. Half the outer Shell, when ripe, bursts horizontally, or leaving an horizontal Opening, over the inner Shell, which afterwards flies open in the same horizontal Manner, discovering a Multitude of small Seeds.

Boerhaave mentions six Species of *Portulaca*; which are,

1. *Portulaca*; latifolia; sativa. *C. B. P.* 288. *Raii Hist.* 2. 1039. *Boerb. Ind. A.* 220. *Portulaca*. *Offic. Park. Parad.* 499. *Portulaca domestica.* *Ger.* 418. *Emac.* 521. **PURSLANE.**

This Plant is well known, and has round, smooth, reddish, and succulent brittle Stalks, with fat, thick Leaves, round, and broader at the End, than next the Stalk. The Flowers grow on the Tops of the Stalks among the Leaves, being small, five-leaved, and yellow, succeeded by roundish Seed-vessels, including small, black, rugged Seed. The Root is small and fibrous. It is sown in Gardens; the Leaves and Seed are used. The Seed is one of the Four lesser cold Seeds.

The Leaves are much used as a Salad, being cooling, and good for the Scurvy, attempering the Heat of the Bile; and help the Strangury, Heat of Urine, and Gonorrhœa. The Seed is cooling and restraining, and good to kill Worms. *Miller's Bot. Off.*

2. *Portulaca*; sativa; latifolia; foliis flavis. *M. H.* 2. 570.

3. *Portulaca*; angustifolia; five sylvestris. *C. B. P.* 288. *Tourn. Ind.* 236. *Boerb. Ind. A.* 220. *Portulaca sylvestris.* *Offic. Ger.* 418. *Emac.* 521. *Park. Theat.* 722. *Raii Hist.* 2. 1039. *Portulaca sylvestris minor five spontanea.* *J. B.* 3. 678. **WILD PURSLANE.**

It grows frequently in fallow Grounds, and by the Sides of Paths. The Herb is used, and agrees in Virtue with the common or Garden Purslane.

4. *Portulaca*; Curassavica; lanuginosa; procumbens. *Par. Bat.* 215.

5. *Portulaca*; Africana; sempervirens; flore rubicundo. *H. A.* 2. 177.

6. *Portulaca*; Curassavica; folio capparidis. *Par. Bat.* 213. *Boerb. Ind. alt. Plant.*

This Plant affords an excellent Aliment and Medicine; its Parts are very succulent, and the Juice astringent, remarkably aperient, expulsive, and cooling in inflammatory Diseases, and very good to wash the Gums, when affected with a Gangrene. A Decoction of the Leaves makes an excellent Gargarism for the Quinsey, and is no less serviceable in the Phrensy, Pleurisy, Peripneumony, Scurvy, and Inflammations of the Viscera and Intestines; it tempers Bile, and is corroborative, especially if the Plant be boiled with Whey. The Juice is somewhat acid, nitrous, and very viscid: Whence it has the same Virtues as the *Sempervivum*, or *Nummularia*, which renders it qualify'd to correct an excessive Motion, or Volatility of the Spirits, a Putrefaction, and a Rigidity of the Fibres; whence it is of Service in all acute Diseases. Being eaten in Salads in the Summer-season, it mitigates Bile, and prevents Disorders which may be justly apprehended from an Excess of that Humour; it destroys Worms, and is of Service in malignant putrid Fevers, Heat of Urine, and the Nephritis. The Leaves, applied to the Head, ease the Pains thereof; the distilled Water is very good for an excessive Flux of the Menes, and for Haemorrhages; the Juice is of great Efficacy in a Consumption. The whole Plant is extremely full of Juice; so that if you compress and rub the Leaves between your Fingers, they will almost spend themselves wholly in Juice; so that if you bruise a Pound of the Leaves, and squeeze out all the Juice, there will scarce remain a Dram of solid Substance. *Hist. Plant. adscript. Boerb.*

Portulaca maritima. *Offic. Portulaca marina nostrat.* *Park.* 724. *Halimus five Portulaca marina.* *C. B.* 120. *Raii Hist.* 1. 195. *Halimus vulgaris five Portulaca marina.* *Ger. Emac.* 523. *Atriplex maritima angustissimo folio.* *Tourn. Inst.* 505. **COMMON SEA PURSLANE.**

It is commonly found in the salt Marshes, and flowers in *July* and *August*. The Leaves, and tender Branches, pickled after the manner of Samphire, are used by the *English* as well as the *Dutch*, in Sawces, for exciting an Appetite. *Raii Cat. Angl.* It is an hot Plant. *Magnol. Bot. Monsp.* Mr. *Stubbs* commends it for a Cosmetic. *Dale.*

PORUS. See *POROS*.

PORI BILIARI. The Biliary Ducts. See *HEPAR*.

PORUS. *Pliny*, in the seventeenth Chapter of his thirty-sixth Book, after he has spoken of sarcophagous Stones, which soon consume dead Bodies, which are laid in them, speaks of others which have a contrary Property of preserving them: Such, he says, was the *Chernites*, very much much resembling Ivory, in which it is reported *Darius* was laid; and such another is the *Porus*, which, for Whiteness and Hardness, he describes

P O T

scribes to be like the *Parian* Stones, but less ponderous. *Pliny* is so brief in his Description, that we are not certain whether he speaks of the Stones which we now call *Peri*. These have their Name from the Multitude of their Pores, or Perforations; in Substances they resemble Coral, and only differ from it in their Porosness. Some of them are near akin to Coral; others are widely different from it. Those of the whitest and closest Substance much resemble Coral, and spread themselves in Branches after the same manner; but it must be observed, that they are all white in general. Those which are wrinkled have striated Lines, which run along the Trunk, and even to the Extremities of the Branches lengthwise; and they are, also, furnished with in their internal porous Substances with Meatuses, which proceed according to the Longitude of the Branches, being separated by the Interposition of a sort of Thread. Those which have Punctations in their Superficies, have their Meatus interrupted by Rays proceeding from a Centre in the interposed Thread to the Circumference. *Ray* from *J. Baubine*.

POSCA. Oxycrate, that is, Vinegar and Water.

POSSETUM. A Posset. The foreign Writers mention this as a sort of Food, or rather Medicine, peculiar to the *English*. The Serum of a Posset, or Posset-drink, appears to be an excellent Liquor, either considered as a Medicine, or Aliment, from what is said of Whey, under the Article *LAC*.

POSTBRACHIALE. The METACARPUS.

POSTHE, *πρόθυ*. The Prepuce.

POSTHIA, *πρόθια*. A Disease of the Eye-lids; the same as CRITHE, or HORDEOLUM.

POSTPOSITIO. When the Paroxysm of an intermittent Fever comes on later than it is expected, this is called the *Post-position of the Paroxysm*; as when it seizes sooner, it is called the *Anticipation*. The first is esteemed a good Sign; the latter, the reverse.

POTABILE AURUM. See AURUM.

POTABILIS MARS. In the *Collectanea Chymica Leiden-
sa*, we find three Preparations of Iron under this Title, from *de Maets*. The first of them is thus prepared:

Take of the Filings of Iron finely triturated, and of the whitest crude Tartar obtained from *Rhenish* Wine, each as much as you please; and of filtrated Rain-water, a sufficient Quantity to form into small Balls: Dry these Balls in the Sun, and bake them along with Loaves in an Oven. Then reduce them to a Powder again; and with a sufficient Quantity of Rain-water, as before, form them into Balls, and again bake them in an Oven. These Measures are to be repeated, till the Iron is found to be soluble in any Liquor. This Medicine is to be exhibited in a Spoonful of Rain-water. The Dose is from six to sixteen Grains, and one Scruple.

Or,

Take of the finest Filings of Iron, one Part; and of the Flowers of Sulphur, two Parts. Triturate them together, and add a sufficient Quantity of Rain-water to reduce them to the Form of a Poulrice. Let them stand in a moderately warm Digestion for twelve Hours. Then pour as much Rain-water upon them as rises three or four Inches above them, and boil all together, till a yellow Tincture is extracted. When this Tincture is poured off, and filtrated, inspissate it till only a fourth Part of it remains; for by this means it will in a few Days assume an highly red Colour.

But the most simple Method of exhibiting Iron, for removing any Obstructions, and especially for promoting the Menfes, and destroying peccant, acid, and austere Ferments, is the following:

Take of well-washed Filings of Iron, triturated in Alcohol, and passed through a fine Sieve, one Part; of the finest Sugar, half the Quantity; and of Mace, a fourth Part: Mix them intimately together. The Dose of this Powder is as much as may be contained on the Point of a Knife.

POTAMOGEITON.

The Characters are;

The Root is fibrous and perennial; the Leaves are disposed alternately on the Stalks, and arise at the Origin of the Pedicle of the spiked Flowers. The Calyx is tetraphyllous, the Flower tetrapetalous, and disposed in Spikes. The Seeds are angulous, naked, four in Number, each succeeding its Floscule. The Plant is produced in the Waters, and grows under them.

Boerhaave mentions eleven Species of this Plant; which are,

1. Potamogeton; rotundifolium. *C. B. P.* 193. *Raii Hist.* 1. 188. *Synop.* 60. *Tourn. Inst.* 233. *Boerb. Ind. A.* 196.

P R Æ

Potamogeton. Offic. *Potamogeton rotundiore folio*. *J. B.* 3. 776. *Potamogeton latifolium*. *Ger.* 675. *Emac.* 821. *Fontalis major latifolia vulgaris*. *Park.* 1254. POND-WEED.

This Plant is frequently found in stagnant Waters and Fish-ponds. It flowers in the Months of *June* and *July*. The only Part of it used is the Herb, which is of a refrigerating and inspissating Quality. It is, also, beneficial against Itchings, inveterate Ulcers, and Nomæ. *Diosco. Dale.*

This Plant receives the Name of *Potamogeton*, from the *Greek* Words *ποταμός*, a River, and *γείτων*, adjacent, because it grows about Fountains; *Millefolium*, from the Smallness of its Leaves; and *Viola Aquatica*, from the Colour of its Flowers. *Hist. Plant. adscript. Boerhaav.*

2. Potamogeton; foliis latis; splendentibus. *C. B. P.* 193.

3. Potamogeton; longo; serrato; folio. *C. B. P.* 193. *Lapathum, fluitans, longo, serrato, folio*. *J. B.* 2. 988.

4. Potamogeton; foliis crispis, conjugatis. *Tribulus aquaticus, minor, alter*. *Clus. H.* 252.

5. Potamogeton; seu Fontalis crispa; foliis alternis; cauliculis compressis. *Tribulus, aquaticus, minor*. *Clus. H.* 252.

6. Potamogeton; aquis immersum; folio pellucido, lato, oblongo, acuto. *Raii Synop. C.* 1.

7. Potamogeton; caule compresso; foliis graminis canini. *Raii Synop.* 61.

8. Potamogeton; pusillum; gramineo folio; caule rotundo. *Raii Hist.* 190.

9. Potamogeton; flosculis ad foliorum nodos. *T.* 233. *Millefolium, aquaticum flosculis ad foliorum nodos*. *C. B. P.* 141. *Myriophyllum, aquaticum, minus*. *Clus. H.* 252.

10. Potamogeton; foliis pennatis. *T.* 233. *Millefolium, aquaticum, pennatum, spicatum*. *C. B. Prodr.* 73.

11. Potamogeton; ramosum; angustifolium. *C. B. P.* 193. *J. B.* 3. 778. *Boerb. Ind. alt. Plant.*

POTAMOGEITON, SALICIS FOLIO. A Name for the *Persicaria, salicis folio, perennis*.

POTASH. See ALCALI.

POTENTILLA. A Name for the *Pentaphylloides; argenteum; alatum; seu Potentilla*.

POTERIUM. See TRAGACANTHA.

POTERIUM, *ποτήριον*, is, also, a Name for a *Malagma*, recommended by *Galen* for a Dropsy, *L. 9. de Comp. M. S. L. Cap.* 3.

POTIO. A Potion; a liquid Form of a Medicine, consisting of as much as can be drank at one Draught. The Writers on Pharmacy distinguish Potions into Cathartic, Cardiac, and Alterative.

POUST. The *Indian* Name for a base Kind of Opium, procured by boiling the Leaves and Stalks of the Poppy.

POUTALETJA. The Name of a low Berry-bearing Shrub, which is very common in *Malabar*.

Of the Leaves of this Tree boiled in Milk, they prepare a Drink, which prevents Sleep, and is of Service in a Lethargy, and other soporous Affections. The Leaves, Flowers, Bark, Root, and other Parts boiled in Water, make a Bath, which is of Efficacy in the Epilepsy, and other spasmodic Disorders. *Raii Hist. Plant.*

PRÆBIUM. A Dose; the Quantity of a Medicine exhibited at one time.

PRÆCIPITANTIA. Precipitating Medicines; that is, Medicines which moderate the Motion and Heat of the Blood, as was supposed, by absorbing and correcting the Acid contained therein. *Præcipitans Magnum* is a Name for the *Os Sepie*.

PRÆCIPITATIO. Precipitation is that Process, by which Particles, after having floated, and been suspended some time in a Menstruum, at length sink to the Bottom. These Particles sometimes precipitate of their own Accord, but oftener by the Assistance of some other Liquor added to the Menstruum. The Reason of the Descent in both Cases is the same.

It may be easily conceived, that Fluids may be made to sustain Bodies specifically heavier than themselves; by making the Resistance, arising from the Cohesion of the Parts of the Fluids, equal to the Excess which there is of specific Gravity in those Bodies above the Menstruum. And it has been shewn, that this Resistance is proportional to the Surface of the Corpuscles. Therefore a contrary Condition to this, is all that is requisite to their being sustain'd no longer; or, which is the same thing, to their Precipitation; That the Tenacity of the Menstruum be not proportional to the Gravity of the Corpuscles: And this may be produced two Ways.

In the first place, Precipitation generally follows upon dropping in a Liquor specifically lighter: For, by this Mixture, the Gravity of the Menstruum, which always is proportional to the compound Gravities of both Liquors, become lighter. The Menstruum being thus diluted, the Force of Cohesion is, also, weaken'd, so that it is not able to resist, or bear up, the Bodies dissolved in

in it: Hereupon, the Equilibrium being taken off, they are precipitated by the Force of their own Gravity, just in the same manner as Hydrometers, which are easily sustain'd in Water, upon pouring in a good deal of any inflammable Spirits, sink to the Bottom of the Glafs. And this does not only agree very exactly with the Laws of Mechanics, but, also, with Experiments themselves. Thus Spirit of Sal Ammoniac does very plentifully precipitate the Filings of Metals, which are dissolved in acid Menstruums, though it be abundantly lighter than any of them. The same thing is done quicker by Spirit of Wine, whose Gravity is known to be almost the least of any. By this Spirit, also, all Salts which are suspended in Water, are precipitated, and afterwards unite into Crystals: So, if you drop in distill'd Vinegar the Drofs of Antimony, diffused in Water, it falls to the Bottom, and affords the Golden Sulphur. After the same manner, Water, Vinegar, &c. make a Precipitation from Acids, tho' more sparingly. Acids themselves, being poured upon others which are heavier, will precipitate whatever is swimming in them. Thus Spirit of Salt precipitates either Lead, Copper, or Tin, dissolved in Oil of Vitriol. So little need is there for Alkalies in this Business, though all the Chymists have unanimously contended for them as absolutely necessary.

In the second place, Precipitation will succeed as well, if there be added an heavier Liquor to the Menstruum: For the Particles of this Liquor, what with their Weight, and what with the Impetus they acquire in their Descent, carry down and sink all the solid Corpuscles they meet with in their Way: So that the Corpuscles, being thus forced down, and kept there by this adventitious Liquor, cannot mount up into their former Situation. And, if any one has a mind to try the Truth of this Reasoning by Experiments, there are enough to confirm it: For not only acid Spirits, but Water alone, will precipitate Tinctures of Vegetables extracted by Spirit of Wine. And the very same Tinctures, extracted with Water or Wine, are precipitated very copiously by acid Spirits, which are heavier. After this manner, Metals which are dissolved in Spirit of Sal Ammoniac, are precipitated with Oil of Vitriol, or Spirit of Nitre. The same Bodies, though suspended in Aqua-fortis, are easily precipitated with Oil of Vitriol, or Bezoartic Spirit of Nitre. And this very Oil, if poured upon Sal Volatile Oleosum, or any other Solution of Salt, ever so much saturated, does not only sink the smaller Particles, but converts almost the whole Liquor into Salt. For when these Liquors are poured upon one another, the Salts with which they abound, being put into Motion by their attractive Force, run mutually towards one another; and, because they don't recoil far back after the Shock, they are at length so united, as to become like a Solid, there being very little Phlegm remaining. The same may, also, be observed in *Tartarum Vitriolatum*. In making all these Experiments, there happens such a Conflict and Effervescence, as evaporates almost all the Moisture, with which the Salts are diluted. And upon this depends the Rationale of chymical Coagulation, a thing of very great Consequence in the Business of Precipitation. Nor can we account for Oil of Tartar's precipitating Bodies dissolved in Acids, any otherwise than from its making a kind of Coagulation with these Corpuscles, which thereby becomes too heavy for, and exceeds the Tenacity of the Menstruum.

Nor does Coagulation succeed only upon the mixing of heavier Fluids, but it, also, very often promotes Precipitation, when the Gravity of the distill'd Liquor is entirely equal to that of the Menstruum, or but very little different from it. And this Agglutination of Parts is to be seen in many Liquors, but most of all in saline ones. Thus Spirit of Sal Ammoniac, Spirit of Hartshorn, that of human Blood, and Sal Volatile Oleosum, whose Gravities are nearly the same as that of common Water, precipitate the Solution of Sublimate very plentifully, as you may observe in making white Precipitate of Mercury: In which Experiment, the Increase of the Weight gives sufficient Indication of an Union of those Salts, which are pretty copious in the Sublimate, and Liquors which are poured upon it: For that which subsides at the Bottom, exceeds in Weight the Sublimate which was at first put in. Also, the Magisteries of Vegetables, extracted by Precipitation, confirm this Account of Coagulation; for these have a greater specific Gravity than the Powders of the Plants they are made from. This additional Weight, therefore, is to be imputed to the Particles of the Liquor, with which Precipitation is performed. *Quincy.*

PRÆCORDIA. The Diaphragm. The Word, also, very commonly imports the same as *Hypochondria*, which, according to *Galen*, in *Prorrh.* are those Parts above the Navel, which on both Sides are subjacent to the spurious Ribs; for the *Epigastrium*, or *Abdomen*, says the same Author, *Cam.* in 2 *Aph.* 35. is divided into the Hypochondrium, the Parts about the Navel, and the lower Belly, (which the *Greeks* call *utero*, (*Etron*) which lies between the Navel and the Pudenda (See

a very accurate Division of those Parts under the Article *ABDOMEN*). The *Præcordia*, or *Hypochondria*, then, may be more fully described, as that external Part of the Abdomen, which extends itself above the Navel on both Sides, from the *Iliæ*, under the cartilaginous Parts called the *spurious Ribs*, (situated above the empty Places called the *Cenæones*) and comprehending, in the Right Side, the Liver; and, in the Left, the Spleen. But the Word, in a larger Sense, is used to signify all the inferior Parts comprehended within this Region, as the Stomach, Liver, Spleen, and Diaphragm; which is the Signification of the Word *ὑποχώρα* in that Sentence, 1 *Prorrh.* 56. where it is said, that "Fevers proceeding from Pains of the *Præcordia*, or *Hypochondria*, are of a malignant Nature." And let this suffice for adjusting our Notion of the *Præcordia*, by which we mean that Part of the Abdomen which is situated above the Navel, and extends itself to the Right and Left under the spurious Ribs.

The *Præcordia* (which we shall henceforth in this Discourse call *Hypochondria*) may be regarded, first, as in a State which is usual to Persons in Health, and is best for the Patient; or they may be considered as in a bad Condition, and unlike that of healthy Persons; as when, for Instance, they are affected with Tensions, Pains, Tumors, and Suppurations. On this Subject we may observe *Hippocrates* speaking in his *Prognostics*, where he says, "The Hypochondria are in the best State when they are free from Pain, and are soft and equal both on the Right and Left Side." And he might justly say so; for, when the Hypochondria are in such a State, we are satisfied, that no Part contained within their Region, as, for Instance, the Stomach, or Diaphragm, have received any Injury. And the good State of those Parts under acute Fevers is of no small Moment towards prognosticating an happy Event; and it is impossible for any of those Parts to be injur'd, and the *Hypochondria*, at the same time, to be soft, and free from Pain. In acute Diseases, therefore, it is of extraordinary Moment towards predicting a Recovery, for the Hypochondria to appear in a very good Condition, as, when they are soft, equal, and free from Pain, both on the Right and Left Sides.

With respect to the Thickness or Carnosity, and the Thinness or emaciated State, of the *Hypochondria*, *Hippocrates*, 2 *Aph.* 35. commends the former, in pronouncing, that, "Under all Diseases, it is better for the Parts about the Navel, and the lower Belly, to appear thick and fleshy; but when they are remarkably lean and extenuated, it is a bad Sign." Whence it follows, that the *Hypochondria* when thick and carnosous, have a promising Aspect. But the best way will be for us, first, to procure a thorough Knowledge of the Patient's *Hypochondria*, and of the State, whatever it be, in which they usually appear; for, oftentimes, they are perceived to be unequal, and not alike soft, in Persons enjoying a good State of Health; for which Reason, not only those *Hypochondria* which are in the best State, but sometimes those which are unequal and tense, provided they were so when the Patient enjoy'd Health, afford a good Prognostic. It is not, however, as good a Sign to have the *Hypochondria* tense and unequal, though it be no more than what was usual in Health, as to have them soft, equal, and free from Pain. But those tense and unequal *Hypochondria*, which are elevated into a Tumor attended with Pain, are always bad, unless they appear as Signs of a Crisis, at the Approach of which there is frequently a Tension, Tumor, or Pain, of the *Hypochondria*.

Of critical Tensions of the *Hypochondria*, the Author of 1 *Prorrh.* 144. thus speaks: "Palpitations about the Belly, with an oblong Tumor and Tenseness of the *Hypochondria*, indicate an Hæmorrhage." And a little after, *Text.* 147. "A Tension of the *Hypochondria*, with an Heaviness of the Head, Deafness, and Confusedness of Sight, prognosticate an Hæmorrhage." *Galen*, also, in his third Book of *Crisis*, says, that a Tension of the *Hypochondria* without Pain is a proper Sign of an approaching Hæmorrhage from the Nose; but when the Tension is accompanied with Pain, it is no Prognostic of an Hæmorrhage, but indicates an Inflammation. Hence we infer, that a Tension of the *Hypochondria* without Pain, and sometimes, from the great Degree of Tension thro' the Redundance of the Blood, with Pain, a Dulness of the Sight, or Scintillations striking on the Eyes, an Heaviness of the Head, with a Redness, or high Colour, of the Face, are all critical; and, in particular, are Signs of an approaching Hæmorrhage from the Nose: For which we have the Authority of *Galen*, *Lib.* 3. de *Crisibus*, & *Lib.* de *Præfag. ad Posthumum*, and the Author of the *Prorrhetica*, *Lib.* 1. & 2. But a Tension of the *Hypochondria*, accompanied with a Coma, Anxiety, and Pain of the Head, are Signs of the Parotides, according to the Author of the *Coac.* 289. And *Hippocrates*, *Lib.* *Prognost.* teaching us to prognosticate future critical Abscesses from Tensions of the *Hypochondria*, says, "That an Inflammation about the *Hypochondria* is succeeded by an Abscess in the inferior

"Parts;

" Parts ; but if the *Hypochondria* be soft, and free from Pain, " you may expect an Abscess in the superior Parts of the Body." Hence it plainly appears, that even a Tension of the *Hypochondria* is sometimes very good and salutary, as it is an Indication of an approaching critical Evacuation.

We may reason in the same manner with respect to Tumors of the *Hypochondria*, though rarely any good Event may seem to be prognosticated from Tumors in those Parts. *Hippocrates*, however, in his *Prognostics*, speaking of those Tumors, says, " That soft Tumors, which are free from Pain, and yielding " to the Touch, remove the Crisis to a greater Distance of " Time, and are less to be dreaded." And more plainly to the same Purpose, a little after, he says, " Soft Tumors, in- " dolent, and yielding to a Pressure with the Finger, are slower " in coming to a Crisis, and less dangerous." Again, in the same Book, he tells us, that " Tumors of the Belly are less dis- " posed to form Abscesses than Tumors of the *Hypochondria*, " and Tumors below the Navel least of all ; but an Hæmor- " rhage may be expected from the superior Parts." And, *Coac.* 290. " A Tumor of the *Hypochondria*, succeeded by a great " or full Respiration, and an high Fever, in bilious Patients, " occasion the Parotides ;" because in such Constitutions the bilious Humours take their Course upwards.

There are, also, Pains of the *Hypochondria*, which are criti- cal ; as, when they are occasioned by a Redundance of Blood distending the Vessels : The Signs concomitant, and indicating a Crisis, are, as we said before, an high Fever, an Heaviness of the Head, or Deafness, or Dimness of Sight, or a Redness of the Face. To this we may add, that Pains of the *Hypochondria* are not bad, when succeeded by a Fever. Of these Pains we find *Hippocrates*, 6 *Aph.* 40. thus pronouncing : " They " who are afflicted with Pains about the *Hypochondria*, with- " out an Inflammation, are relieved from them by the coming " on of a Fever." And, *Coac.* 281. we read, " That Pains " and Tumors of the *Hypochondria*, if recent, and not attend- " ed with an Inflammation, meet with a Solution from Rum- " blings arising in those Parts, and especially from their Erup- " tion together with Discharge by Stool and Urine."

Of Abscesses affecting the *Hypochondria*, the Author of the *Coac.* 281. pronounces, that, " As to those which break out- " wardly, it is best, that they should be con- racted into a very " small Space, and to a very sharp Head." And, continuing to speak of the same Abscesses, he says, " For those which tend " inwardly, they are to be accounted the safest, which shew no " outward Mark of themselves, neither by Tumor, nor Pain, " nor Colour ; but the contrary to these are of the worst " Kind."

The *Hypochondria*, in acute Diseases, tense, hard, pained, and unequal, are bad, as we are taught by *Hippocrates* in the *Prognostics* ; and the same Author, 2 *Aph.* 35. passes a like Judg- ment on a remarkable Emaciation or Extenuation of those Parts. But, in order to a clearer and more distinct Notion of these Disorders, which affect the *Hypochondria*, and are all of them bad Prognostics, if attended with other bad Signs, we shall choose to treat of them all singly, and of their Causes, before we inquire what Prognostics may be formed from them ; for without a just Idea of those Disorders, and some Knowledge of the Causes from whence they proceed, we shall never be able, with any tolerable Certainty, to form Predictions from them.

We shall begin, then, with a Tension of the *Hypochondria* ; which Disorder is sometimes accompanied with a Tumor, and an Hardness which resists the Touch. Sometimes there is a Tense- ness of the Parts without a Tumor, in such a manner, that though they appear distended, yet they are empty ; and such Tensions as these, are what *Galen* calls *empty*, *softish*, and *tumorless Tensions*. *Hippocrates* has sometimes Occasion to speak of these Tensions, as in 3 *Epid.* *Agr.* 2. where he says of *Hermocrates*, that " He had a soft Tension of the *Hypochon- " dria*." Sometimes he calls those Kinds of Tensions *υπολαπιδεις*, " softish ;" and the *Hypochondria* thus affected, *μετωρο*, " elevated ;" as he does in the Case of *Erasinus*, 1 *Epid.* *Agr.* 8. In such Cases there is indeed a Tension of the *Hypo- chondria*, but such a Tension as is empty, and free from any hard Tumor. As to their Figure, these Tensions are some- times oblong, according to that of the *Musculi Recti Abdomi- nis* ; sometimes broad, and sometimes round like a Crescent, in which Shape Tumors of the Liver are represented.

A Tension of the *Hypochondria* is attended with an Hardness, or an hard Tumor, from an Inflammation affecting either the Muscles, or the convex or gibbous Part of the Liver, or the Spleen, or even the Stomach. There is, also, a Tension with- out Hardness, as from a Repletion of the Muscles with a fla- tulent Spirit ; and a Tension with an Hardness, but no Tumor, as from a Redundance of Blood in the Vessels. A Tension without Hardness is, also, without Pain, as is frequently ob- served, where a copious Hæmorrhage from the Nose succeeds ;

a Tension from a Flatus is without Hardness, and without Sense of Weight ; a Tension from a Redundance of Blood is attended with both ; and, lastly, a Tension from an Inflamma- tion is attended with a Tumor, if an Inflammation affects the external Part of the Muscles, or the convex Part of the Liver, or the Spleen, or the Stomach. And this is the Doctrine of Ten- sions in general. But we think ourselves obliged to be more ex- plicit, because it has been said, that a Tension of the *Hypo- chondria*, attended with an Hardness, proceeds from an Inflam- mation of the Viscera before-mentioned ; whence we may be inclined to conclude, that this kind of Tension is always from the same Cause. This, indeed, is true ; for all Tensions, attended with a Tumor, or Hardness, and Pain, indicate an Inflammation of the Viscera : Yet it is as true, according to the Doctrine of *Ga- len*, that there are several Sorts of Tensions, which are not hard, but soft, or, as the same Author explains it, void, empty, and sublime ; and these Tensions may not be accompanied with an Inflammation of the Viscera ; for which Reason they deserve our more accurate Examination. Those Tensions, then, which are soft, or empty, or tumorless, which Words all signify the same thing, are caused either by an Inflammation of the in- ternal Parts of the Viscera, or by a Driness in the Origin of the Nerves, which supply the Diaphragm. Hence the *Hypochon- dria* are attracted upwards, and, on that account, are some- times, by *Hippocrates*, call'd properly *μελωρα*, " sublime." In this Case the *Hypochondria* are, indeed, distended ; but the Inflam- mation being seated in the internal Parts of the Viscera, remote from our Notice, there is no concomitant Tumor, nor Hard- ness. *Galen*, in 3. *Epid. Com.* 2. *Text.* 1. tells us, that " a " soft Renitency of the *Hypochondria* indicates an Inflammation " of some Part of the Viscera, as the Liver, Diaphragm, or " Spleen." And the same Author, on 1 *Epid.* treating of the Tension which affected the *Hypochondria* of *Silenus*, says, that " through an Inflammation of the Diaphragm, the *Hypo- " chondrium*, by virtue of its Continuity, was attracted up- " wards, and distended, without a Tumor." Again, on 3 *Epid.* speaking of this kind of Tension, he has these Words : " As if he " (*Hippocrates*) had said, the Right *Hypochondrium* was dis- " tended, but without a Tumor, either because the Inflam- " mation of the Liver was not great, or affected only the lowest " Parts, by which it is united to the Belly ; the gibbous Part " thereof, in Conjunction with the inferior Parts, being not as " yet elevated into a Tumor." And this was the Case of *Her- mocrates*. The *Hypochondria*, then, may be affected with a Ten- sion of a soft kind, that is, without a Tumor, from an Inflamma- tion of the Diaphragm, Spleen, or Liver, provided this last- mentioned be not wholly nor violently affected, but in a small Degree, or only in its lower Parts ; whence the gibbous or con- vex Part of the Liver being free from an Inflammation, the Tension will feel soft to the Touch, and appear without a Tu- mor ; but this Sort of Tension will never happen, when the Liver is either wholly or violently inflamed.

It was said before, that such a soft kind of Tension may proceed, not only from an Inflammation of the Viscera, but from a great Driness. *Galen*, *Com. in Prognost.* 27. compre- hends both these Causes under the following Expression : " Sometimes, says he, there is a Tension of the *Hypochon- " dria* without an Inflammation, properly so called, either from " an immoderate Driness, not only in the Parts themselves, " but in the Diaphragm or Pleura ; or from an Inflammation " with a Tumor affecting the Muscles of the *Hypochondria*, " without an Inflammation, properly speaking, which is a Tu- " mor attended with a Pain." And those Causes of a soft Ten- sion are expressed yet more plainly by the same Author, *Com.* 2. in 3 *Epid. Cap.* 4. where he says, " There is a Tension " of the *Hypochondrium*, when the adjacent Parts are attracted " by the Diaphragm ; and there is a Tension of the Dia- " phragm itself in a Pleurisy, sometimes from a violent Inflam- " mation of the Pleura, sometimes from a Retraction of the " Nerves belonging to the Diaphragm towards the Origin of " the Nerves, and sometimes from an Inflammation of the Part " itself."

Having said thus much of the Causes of a Tension of the *Hypochondria*, we proceed to inquire, what may be predicted from it. And here we are told by *Hippocrates*, in *Prognost.* " That an hard and painful Tumor in both the *Hypochondria*, " or only in the Right *Hypochondrium*, is a very bad Pro- " gnostic ; for such Tumors, appearing in the Beginning, sig- " nify, that Death is not far off." *Galen*, commenting on this Place, by Tumor understands an Inflammation of the Liver, Stomach, or Spleen, which often proves mortal in a short time, especially when violent ; tho' our Prognosticating from this Sym- ptom must be confirmed by other pernicious Signs. But when the Tumor proceeds from an Inflammation of the Muscles, it is seldom accounted mortal. And *Hippocrates* himself, a little afterwards, seems to limit the Judgment he had passed on hard and painful Tumors of the *Hypochondria*, in saying, that their

Appearance

Appearance in the Beginning prognosticates Death in a short time, in such a manner, as if none but great Tumors, and those not always, portended so fatal an Event, by saying, "When- ever, therefore, a Tumor (thus circumstanced) is painful, hard, and large, it signifies, that the Patient is in Danger of dying in a short time;" as if he had said, Those Kinds of Tumors, that is, Inflammations of the Viscera, if they prove mortal at all, destroy the Patient in a short time; for if they continue long, they indicate a Suppuration, rather than Death; agreeably to that of *Hippocrates*, delivered a little before, where he says, "If the Fever continues above twenty Days, and the Tumor subsides not, the Disease changes to a Suppuration." Tumors, therefore, of the Hypochondria, attended with Pain, and not proceeding from an Inflammation of the Muscles, but of the Liver, or Stomach, are dangerous, especially if the Inflammation be violent.

But our Prognostications in these Cases will be confirmed by the Pathognomonic Signs of these Inflammations, which indicate their Nature, and, if pernicious, portend a fatal Event. Such were the Signs observed by *Hippocrates* in *Apollonius*, 3 *Epid. Sect. 3. Ægr. 13.* of whom he says "that he was afflicted with Want of Sleep, and a bad kind of Inflation; had a great Thirst; laboured under a Coma, with a Tumor of the Right Hypochondrium, attended with a Pain; that his extreme Parts, on all Sides, were somewhat refrigerated; talked a little irrationally; forgot all he had said; and was delirious."

No less dangerous are softish Tensions of the Hypochondria without a Tumor, since, as we have shewn, they indicate either an Inflammation of some one of the principal Viscera, or a very great Driness of the Origin of the Nerves which descend to the Diaphragm, or of the Pleura. But these Tensions, it is to be observed, though always bad, never of themselves portend Death, but only in Conjunction with other bad Signs appearing at the same time; for not all who labour under an Inflammation of the Liver, Stomach, or Diaphragm, die. It will be necessary, therefore, to consult the rest of the Signs; and if these, too, are bad, and of the Number of those which are fatal, we may safely venture to predict the Death of the Patient. Thus fatally circumstanced were the Tensions observed in *Silenus*, *Hermocrates*, *Philistes*, the young Man of *Melihæa*, and the young Man who lay in the *Forum Mendacium* [*ἐπὶ ψευδῶν ἀγορῆς*] who all, as you may read in the first and third Books of the *Epidemics*, had this softish Tension of the Hypochondria, attended with other bad and deadly Signs.

On the same account Pains of the Hypochondria, attended with the aforesaid Tension, and other bad Signs, are usually mortal. Thus it was in the Case of the Wife of *Dromædes*, 1 *Epid. Ægr. 11.* who, on the third Day, was seized with a Pain of the Hypochondria; and made thick, turbid Urine; which had no Settlement; and had cold Sweats; which were all mortal Signs. And, *Ægr. 12.* it is related, "that a certain young Man, being feverish, went to Supper, and drank pretty freely; at Night he vomited up all, and was seized with an high Fever, attended with a Pain of the Hypochondrium, and a softish Phlegmon tending inwardly; and he had a troublesome Night; his Urine, at first, was red and thick, and deposited no Sediment; his Tongue was very dry, but he was not very thirsty." All these were very pernicious Signs, and very fatal to the Patient, who died on the eleventh Day. The Author of the 1 *Prorrh. 56.* says, "that Fevers, proceeding from Pains in the Hypochondria, are malignant." But *Galen* says, that all Fevers from the Hypochondria are not malignant, since there are several Parts seated therein; but only such as are excited by an Inflammation of the Diaphragm, Stomach, and Liver; nor are even these all malignant, nay, perhaps, not so much as acute, so far are they from Malignancy: Thus *Galen*. But the Malignancy of acute Fevers is to be demonstrated from other bad Signs. It may be added, that those Kinds of Tensions and Pains are bad and mortal, if they continue long attended with some pretty copious Evacuation. Of these it is said, *Coac. 284.* "that Pains arising in the Hypochondria are bad in every Circumstance, but especially if accompanied with a Looseness." This appears from the Cases of the Sick, to which we just now referred; particularly that of *Silenus*, 1 *Epid. Ægr. 2.* who laboured under a Tension of the Hypochondria, accompanied with thin blackish Stools; And in the Case of *Erasmus*, *Ægr. 8.* who had a painful Tension of the Hypochondria, attended with Sweats.

We have spoken enough on the Subject of Predictions from bad Tensions of the Hypochondria; and proceed to speak of Suppurations affecting the same Parts, which are bad, if attended with a great Looseness, Nausea, Syncope, Vomiting; and worst of all, when the Fever is not at all remitted, nor the Patient relieved thereby. We said before, that Tumors, which continue long with a Fever, pass into an Abscess, or Suppuration,

on the Authority of *Hippocrates*, who, in his Prognostics, says, "That, if the Fever holds the Patient above twenty Days, and the Tumor does not subside, there is a Conversion into a Suppuration;" and a little after, "If the Fever goes beyond the Bounds of sixty Days, and the Tumor, in that time, does not subside, it indicates a Suppuration, both in this Case, and, also, when the Tumor affects any other Part of the Abdomen." Of the Prognostics, which may be drawn from these Kinds of Suppurations, the Author of *Coac. 281.* treats, where he says, "Among mortal Abscesses are to be esteemed those which break inwardly; but, of those which break outwardly, the most laudable take up the least Space, and gather to the sharpest Head. Of those Abscesses, which tend inwardly, the best are those which shew no outward Marks of any Tumor, Pain, or Heat; but the contrary to those are very bad." Hence we learn to know bad Suppurations; and that, to be sensible of a Tumor, Pain, or Heat, in the Hypochondria, is an Indication of a latent and not elevated Inflammation. If, therefore, this Tension of the Hypochondria continues after the Suppuration, without in the least relaxing, it is a pernicious Sign; but if there be, also, a Pain and Heat, it is a worse and more fatal Prognostic; but there is the greatest Reason for predicting the Death of the Patient, when a copious Evacuation of Pus gives him no Relief; and when he finds himself the worse after such Excretions, his Case is esteemed desperate. For such an Evacuation is one of these critical Symptoms, which determine nothing, and, consequently, are fatal; and the more so, if attended with a Decay of Strength, or some other bad Sign.

These are the Predictions we have Reason to make from a Suppuration in the Hypochondria; but, before we conclude this Discourse, it will be fit to observe, that *Hippocrates*, in his *Prognostics*, tells us "That if there be a Pulsation in the Hypochondria, it indicates a Disorder of the Reason, or a Delirium." But, in this Case, we are to observe the Eyes of the Patient; for, if he frequently moves his Eyes, and casts his Looks from Place to Place, Madness is to be expected; agreeably to that in *Coac. 282.* "A Pulsation in the Hypochondria, with a Perturbation or Disorder of the Senses, portends a Delirium; and the more, if it be attended with frequent Motions of the Eyes." And such an Event seems probable, either from an Inflammation of the Diaphragm, or an Effervescence of the Humour, by which a Multitude of Flatulencies are generated; which, ascending in great Quantities to the Head, by heating and stimulating the Membranes of the Brain, excite a Delirium. This Pulsation of the Hypochondria is generally bad; though sometimes good, when it precedes a Crisis; in which Case it is distinguished from a bad Pulsation by critical Signs. But when a Pulsation in the Hypochondria is attended with other bad Signs, it ought to be esteemed a mortal Prognostic; agreeably to *Coac. 283.* where we read, that "A Cardialgia, [*καρδία πόνος*] attended with a Pulsation of the Hypochondria, and a Fever, in which the external Parts are refrigerated, is bad, both on other accounts, and the more, if it be attended with an EPHIDROSIS" [See that Word]. And let this suffice to be spoken concerning Predictions from good or bad Hypochondria. *Prosper Alpinus de Præfag. Vit. et Morb. Ægr.*

PRÆCURSORES, in *Paracelsus*, are the Signs of an approaching Distemper.

PRÆDICTIO. A Prediction; that is, a Prognostic.

PRÆFOCATIO. A Suffocation. It is applied to hysterical Fits.

PRÆFURNIUM. The anterior Part of a Chymical Furnace, by which Coals are conveyed to the Grate, or Fire-place.

PRÆGNATIO. Impregnation.

PRÆLINGUA. The anterior Part, or Tip, of the Tongue.

PRÆLUM. A Press, in Pharmacy, for the Expression of Oils and Juices.

PRÆNOTIO. A Prognostic, or Foreknowledge.

PRÆOPINATIO. An Uncertainty in the Mind of a Physician, in prognosticating the Event of a Distemper.

PRÆPARANTIA MEDICAMENTA. Preparing Medicines; that is, such as prepare the morbid Humours, and dispose them to separate from the healthy, and pass off by the Help of Evacuants.

PRÆPARANTIA VASA are the Spermatic Vessels.

PRÆPUTIUM. The Prepuce, or Foreskin. See GENERATIO.

PRÆSAGIA. Presages.

Three Things principally contribute to render a Physician perfect: The first is, that, from accurate Observations, he be able to trace and investigate the Origins and Causes of Disorders, in order to oppose them in their Beginnings by proper Remedies; or that, knowing these Causes, he

may give salutary Precepts for preventing their Effects: The second is, that he accurately know the various Natures of Diseases, and their Differences, with respect to different Constitutions, that he may be the better capable of discovering Medicines proper and adequate for removing them. The third is, that he may be able to form a right Judgment concerning the Event of Disorders; as, also, concerning the Operation and Effects of Medicines. But though this last does not contribute directly to obtain the End of the Healing Art; yet it is certain, that it greatly promotes the Certainty of Medicine, and the Reputation of the Physician. For this Reason *Hippocrates*, in the very Beginning of his *Prænotiones*, speaks in the following manner: "It is, in my Opinion, most expedient for the Physician to form a Prognostic; since, when he declares, not only what is past, present, and to come, but, also, what escapes the Patient himself, he must, by these very means, procure the greater Confidence and Trust." And in *Prorrhetie. Lib. 2. Sect. 3.* he tells us, "That the Physician ought to be mindful of this; that, if his Prediction succeeds, he will be admired by the Patient; whereas, if he fails in his Prognostic, he will be hated, if not looked upon as a Madman." But this exalted Art of Prognosticating is so difficult, uncertain, and precarious, that we find, from Experience, the most sagacious Physicians have failed in it; since we often see the Patient die, of whose Recovery they were certain. *Hippocrates* confesses this, and pronounces all Prognostics in acute Diseases fallacious. In consequence of this Difficulty in forming Prognostics, the most sagacious Physicians have placed Medicine among the conjectural Sciences; and the Vulgar have not only deemed the salutary Art uncertain, but, also, despised its Professors.

But, though no Part of Medicine is incumbered with more Difficulties, than the Prognosticating Art, yet I do not despair to reduce it to the Form of a Science, and to establish it on certain general Axioms, and even Definitions; provided we assume what is necessary for this Purpose: But we shall first inquire into the Causes which may have so long hindered this Part of Medicine from being established into a Science. The most considerable, therefore, of these Causes is a Defect of Observations; for, as accurate Observations, and Histories of Diseases, are the first Foundation of Medicine, from which we learn whatever happens in Nature, what Effects are produced in this or the other Disorder, and what Changes are induced on human Bodies by particular Substances; so such Observations supply us with the Circumstances, the Matter and Opportunity of forming right Prognostics. The Physician, who duly compares these Things, and has a sufficient Knowledge of Natural Philosophy and Anatomy, is able accurately to investigate the true and adequate Causes of what is past, present, and to come; from which he can afterwards form a right Judgment of the Danger of a Disease, and tell, whether it will terminate in Death, or Recovery. But, as the Antients drew their Prognostics, not from entire Histories of Diseases, but from particular Circumstances, Numbers of which are collected by *Hippocrates*, and others, who have trod in his Steps, so it is not surprising, that they should rarely answer, but frequently prove fallacious. Besides, as the Antients wanted a rational Medicine, neither understood the true and genuine Natures and Causes of Life, Diseases, and Death, and were grossly ignorant of the Structure of the human Body, and the various Motions depending upon it; so they could not, even from the fullest and most circumstantial Observations, deduce the true Causes and Signs of the future Event of a Disease, with respect to Death, or Recovery: Much less could they comprehend and account for the different Operations of Medicines. Hence it is obvious, that the Antients treated, not only this, but all other Parts of Medicine, in an empirical manner. Thus, for Instance, if any one laboured under an acute Fever, and died under a particular Train of Circumstances, and if this happened for several times, they forthwith laid it down for a Rule, that these Symptoms were Signs of Death. But, because these Symptoms vary very surprisingly, according to the Diversity of Patients, Diseases, Countries, and Seasons, hence numberless Precepts are laid down, especially by the Antients, which rarely hold good; so that *Hippocrates* confessed, that the Prognostics, with respect to Life and Death, were very uncertain in acute Diseases.

That this Art of Prognosticating may receive more Advances, and, in time, find a Place among the Sciences, all Circumstances are to be carefully consider'd, and adverted to, in the Progress or History of the Disease: Nor is it sufficient to know the Disease, and its Causes, since, in order to form a right Prognostic, it is absolutely necessary the Physician should have a perfect Knowledge of the Constitution of the Patient; for it is of great Importance, to know the Age and Strength of the Patient, the State of his Viscera, the Condition of his Blood and Humours, his previous Method of Life, the Season of the Year, whether his Body is strong or weak, and whether his nervous System is disposed to anomalous and spasmodic Mo-

tions. It is, also, necessary the Physician should know the several Stages of the Disease, in which certain particular Symptoms happen: He must, also, inquire in what Method the Cure has been carried on, that thus he may know, whether any Error has been committed by the Patient, or by any other Physician. From these Things, duly consider'd, he is to form a Judgment, what Signs or Symptoms, under these or other Circumstances, in this or the other Patient, prognosticate a salutary, or a fatal Event: For it often happens, that a particular Symptom of the same Disease proves fatal to one Patient, and not so to another. Thus we frequently observe, that when infirm and old Persons, those wasted with Hunger, or previous Diseases, or long Grief, are seized with a Fit of the Stone or Colic, they generally die under the slightest Train of Symptoms, which seem to portend no Danger, and which are easily supported by the Robust and Vigorous. In acute Disorders, the same is, also, observable: Thus, in acute Fevers, those who are of a slender Habit, and whose Parts are exquisitely delicate and sensible, are racked with violent Pains, Anxieties, Watchings, a Delirium, and insatiable Thirst, and yet escape; whereas, when those who are of a spongy Habit of Body, or whose Strength is impaired, are seized with the same Kind of Fever, they do not complain of any great Uneasiness, Pain, or violent Heat; yet die delirious, in the Height of the Disorder, upon the least external Refrigeration. The Stages of the Disorder are, also, of great Importance in forming a Judgment of its Symptoms: Thus it is certain, that an Epilepsy, especially in Children, often happens without any Injury, in the Beginning of the Small-pox; whereas an Epilepsy, in the Height of this Disease, infallibly proves mortal. In the Beginning, also, of the Small-pox, a Phrenitis is in young Persons often observed to be without Danger; but, if it seizes the Patient about the ninth or tenth Day, it is a certain Sign, that Death is not far off: For this Reason, in forming Prognostics, all Circumstances are duly to be separated, distinguished, and considered: Hence *Hippocrates*, in his *Prorrh.* justly advises Physicians to Caution, as in all the Parts of Medicine, so more particularly, in forming Prognostics; for a Physician in no manner opens the Mouths of People against him, and exposes himself to Contempt, more effectually and shamefully, than by false and ill-founded Predictions; especially when a Patient is left for irrecoverable, and afterwards recovers; or, when the Patient dies, though the Physician was absolutely certain of his Recovery: For I have known some Physicians affirm, that their Patient would not die, when a few succeeding Hours have put an End to their Lives.

Thus, though the Prognosticating Art is very difficult, yet the Physician ought to do all he can, to have some certain Signs and Marks of future Recovery, or Death, which, in my Opinion, may be obtained; for it is certain, that all Events, whether with respect to Life or Death, proceed from certain adequate Causes, without which they cannot happen. If, therefore, the Physician thoroughly knows the Causes why a Patient must necessarily die by a Disease; and if he observes these Causes in the Patient, by their usual and infallible Signs; he may certainly, from their Presence, predict and foretell the Event they will produce. In the same manner, if a Physician knows in what Manner, at what Time, by what Ways or Excretions, a Disease is terminated, and the Patient recover'd; from the Presence of these Circumstances, he may confidently and reasonably predict future Health. We must, also, condemn the Practice of those Physicians, who, in the Beginning or Progress of a Disease, before they either have, or can have, certain Signs, either of Health or Death, rashly form a Prognostic, with respect to its Event: For we are by no means, from the Beginning of a Disease, to form a Judgment of its End; for a Disorder which begins gently, and proceeds mildly, often rages with Violence, when arrived at its Height.

I am not of Opinion, that a Physician can, in the Beginning or Progress of a Disease, form a Prognostic, either with respect to the Life or Death of the Patient, as the Vulgar believe, and, therefore, demand a satisfactory Answer from the Physician. I assert, however, that both in acute and chronical Disorders, there are certain Signs and Marks by which we may both foresee and predict a fatal, or a salutary Event; but, before we can do this, we must wait for the Times in which these Signs discover themselves. Besides, it is one thing to pronounce a Disease dangerous, and another to prognosticate future Death; for the former may be conjectured at, even in the Beginning of the Disease, from the Nature and Strength of the Patient, and the Genius of the Disease; whereas the latter cannot be prognosticated, except when the true Signs of Death are present. But, before we consider the Signs by which we may be sure of a future Death, in any violent and dubious Disorder, we shall give a Theory of Death, and investigate its true Causes, that what we are afterwards to advance, may be the better understood.

As the Antients were entire Strangers to solid Reasoning in medicinal Affairs, so it would be to no Purpose to endeavour from their Works, to discover wherein the Nature and Essence of Death consists; for they assert nothing more, than that Life consists in a due Temperament of the innate Heat, and the radical Moisture; and Death in the Extinction of these: But as these Words convey no clear Idea to the Mind, so nothing solid or satisfactory can be deduced from them: But after, in our Times, by the Study and Contemplation of Nature, and by a careful Discovery of the Structure of the human Body by Anatomy, Light and Truth began to diffuse their genial Rays on Medicine, and the Circulation of the Blood was discovered, the Reasons and Causes of Life and Death can no longer remain in the Dark; for as by the constant and free Circulation of the Blood and Humours, the Body, in itself subject to Putrefaction, is preserved from every Degree of Corruption, all the Actions, whether natural or animal, remain entire, and Vigour is imparted, both to the Mind and Body; so, when this Circulation is totally destroy'd, we observe, that the Force of the Mind and Body is cancel'd, all their Functions cease, and the Body itself is forthwith converted into Putrefaction: Hence we understand, that Death is present, when the Circulation of the Blood is so effectually stopped, that it can by no Means or Art be restored. Now, as this Circulation of the Fluids depends on the Motion, Impulse, and Tone of the Heart, Arteries, and all the Vessels furnished with nervous moving Fibres, so the Cause of Death is only to be sought for in a total Destruction of the Pulsation of the Heart and Arteries, and an effectual Abolition of the Motion of the Thorax, so subservient to Respiration. We now come to explain, how in Diseases these Motions of the Heart and Thorax are totally intercepted.

The Seats, therefore, of Diseases, and, consequently, the Causes of Death, can in no manner be more accurately investigated, than by Anatomy, or the Inspection of Carcasses: Now, upon laying open Carcasses taken off by any Disorder, the evident Causes of the Patient's Death are forthwith subjected to our Senses; for whether the Patient has died of an acute, or a chronical Disorder, a putrid Corruptio of some Part or other, accompanied with an highly fetid Smell, is always observed; for always, in some of the nobler internal Parts, either in the Stomach and Intestines, or within the Brain, and its Membranes, or in the Liver, Uterus, Kidneys, Spleen, or Lungs, there is a certain putrid and sphacelous Corruption, hardly tolerable on account of its fetid Smell; and this is found to proceed either from a Stagnation or Inflammation of the Blood, which, in acute Disorders, produces Death; or from a Stagnation and Extravasation of the Blood and Humours into the principal Cavities of the Body, such as the Head, Thorax, or Abdomen. This last principally happens in chronical Diseases, where the Viscera, especially in the Thorax and Abdomen, are found corrupted by extravasated Pus, or Serum. Upon dissecting the Bodies of those who have died of any violent Disorder of the Head, an Apoplexy, for Instance, or a Lethargy, there is always an inflammatory and sphacelous Stagnation of Blood, in the Meninges, observed: The like happens in those who die of violent Disorders of the Breast; for in Patients taken off by a profound Pleurisy, or Peripneumony, the whole vascular Compages of the Lungs is found infarcted and obstructed, by corrupted Blood. In Patients who die by a Phthisis, the Lungs are found full of purulent Tubercles, or a great Part of them are corrupted, and corroded with Pus. In convulsive Asthmæ, a large Collection of Water in the Thorax generally destroys the Patient; and in a suffocative Catarrh, which soon proves mortal, there is a Collection of Blood or Serum in the Bronchia of the Lungs, which hinders the free Ingress and Egress of the Air. In investigating the Causes of Death, in those Disorders which have their Seat in the Abdomen, we find in a Cachexy and Dropsy, that the Liver and Omentum are indurated, or corrupted by a large Extravasation of Serum. In the Morbus Niger of Hippocrates the Spleen is generally large, infarcted, and corrupted, whilst, at the same time, there is an Extravasation of Blood in the Cavity of the Stomach and Ileum. In those who die of violent Iliac Passions, Colics, Choleras, Dysenteries, and Cardialgias, the Parts of the Stomach and Intestines, are found inflamed, sphacelated, and corroded, so as to diffuse an highly fetid Smell. The Patient who dies of a violent Pain arising from a Stone firmly impacted in one of his Ureters, has his Stomach principally inflamed, the Kidneys, and urinary Ducts and Passages, being at the same time affected, and corrupted. In such Disorders of the Uterus as prove mortal, the Womb is either inflamed, exulcerated, sphacelated, or corrupted by extravasated Serum.

As for acute Disorders, the most considerable of which are Fevers, which destroy so many in the Flower of their Age, and are so unfriendly to the human Constitution, they prove

fatal in no other manner than by an Inflammation, which terminates in a Sphacelus of the internal Parts, especially of the Stomach, Intestines, and Meninges; for these Phenomena are universally observed in those destroyed by Fevers. Poisons of every kind prove mortal by a sphacelous Inflammation, especially of the Primæ Viæ, which, upon opening the Patient immediately after his Death, is subjected to the Senses; so that such an Inflammation is, among all others, the most certain Sign of having taken Poison. In Patients destroyed by Worms, the Intestines are visibly corroded and inflamed. From all which I think it sufficiently obvious, that Death cannot readily happen, without the Putrefaction and Corruption of some internal Part; so that Putrefaction may be justly said to be highly unfriendly to Life, and fatal to Mankind; for, as the Putrefaction of the human Body quickly succeeds a total Destruction of the Circulation of the Blood, so it is generally the adequate, true, and almost perpetual Cause of Death, and which attacks either the external Parts, though rarely, or, which happens most frequently, those of the internal Kind; so that we may truly affirm, that hardly a Patient among a thousand dies without a Sphacelus: Only we must except such as die violent Deaths, and those who are suddenly taken off by a Polypus blocking up the Mouths of the Vessels. But, in all other Subjects, when opened after Death, a fetid Putrefaction, highly ungrateful to the Smell, is perceived.

But though the Causes of Death are most evidently discovered, by dissecting Persons after Death; yet we must here give a Caution, not to confound the Causes of Death with the Causes of Diseases, which we see frequently done: For I have observed, that several Physicians, when a Patient dies of a dangerous Disorder, immediately order his Body to be laid open; and, when the internal Parts are found sphacelated and corrupted, they shew them to the By-standers, and inform them, that the Patient could not possibly be saved, in consequence of so violent a Disorder, thus manifestly confounding the Causes of his Death, with the Causes of his Disease; whereas it ought principally to be consider'd, whether those Causes which produced Death, might not, by proper Measures, taken in due Time, have been prevented. By these means they endeavour, artfully, to palliate and cover their Errors, if they have, possibly, committed any. Since, therefore, the Nature and Essence of Death consists in a putrid Corruption; hence we may justly infer, that the Physician, who intends to preserve his Patient, ought carefully, by proper means, to prevent and remove this sphacelous Corruption, which always proceeds from a Stagnation of the Humours, and strictly forbid him the Use of every thing which can, in the least, promote such a Putrefaction.

But, that we may more accurately consider this Subject, and be able, from certain Signs and Marks, to foresee and predict such a future Corruption, we are to investigate the Causes by which it is generated in the human Body: For as no Effect in Nature is produced without certain and adequate Causes, so, we may affirm, that there are certain Causes of this Corruption, from which, when present, a right Prognostic is to be deduced. But, before we attempt an Explication of these Causes, we shall briefly shew, why Putrefaction is so unfriendly to the human Constitution, that a slight and gentle Sphacelus, in a small Part of the Stomach and Intestines, is sufficient to destroy the Patient suddenly. This, therefore, in my Opinion, happens in the following manner: The Circulation of the Blood; on which depends the Soundness of all the Functions of the Body, is supported by the Impulse, Strength, and moving Force of the Solids. But this depends not, as some imagine, on any immaterial Being, but, rather, on the highly subtle Fluid of the Blood and Nerves, and its Influx into these Parts, as is sufficiently obvious from this Experiment, that when the Nerve, or Artery, which runs to any Part is tied, or cut, all Sensation, Motion, and Nutrition, are destroyed in that Part. Besides, that the Strength of the Parts depends on some material Principle, is certain from this, that, by Hunger, Strength is impaired; but immediately restored by the Exhibition of proper Aliments. Now there is nothing in Nature so prejudicial, and which so soon destroys Strength, as Putrefaction; as we observe in a Sphacelus, or in an exulcerated Cancer, which soon destroys, not only Strength, but Life. It is, therefore, certain, that Putrefaction conceived in the Body, especially when it increases and diffuses itself, intimately mixes its malignant Vapour, principally with the nervous Parts, and moving Fibres; and being highly unfriendly to the Fluid, which is the Origin of the Motion of the Solids, it corrupts it, as it were, extinguishes the Systole and Diastole of the Heart, and totally destroys the Tone and Motion of the Fibres.

In Diseases there are, therefore, two Methods by which Death is brought about; one of these is sudden and precipitate, and this is produced by violent Constrictions of the nervous Parts, which either arise from Inflammations, and sometimes,

In the Vigour of the Disease, generate fresh inflammatory Stagnations, which tend to a Sphacelus, and the Death of the Patient, which principally happens in Fevers, and acute Disorders: The other Method is more slow, and happens gradually, from a Corruption of the Viscera, and a Stagnation and Extravasation of the Humours; and this principally happens in chronical and long-protracted Disorders. As for Death, in acute Disorders, or Fevers, it generally proceeds from violent Spasms, which bring on an Inflammation of the Stomach, Intestines, or Membranes of the Brain, together with a mortal Corruption; for Spasms are universally hurtful, and unfriendly to the Constitution, because they direct the Motion of the Blood and Humours from the Circumference of the Body to the internal Parts, and obstruct the salutary Secretions, so necessary to Life and Health. Besides, such is the Force and Power of Spasms, that they hinder the free Circulation of the Blood, in which the very Essence of Health consists; and, by rendering its Motion unequal, produce Congestions of Blood in the nobler Parts, especially in the Head, Stomach, and Intestines, which, if not surmounted by Nature, by means of an happy Discussion and Resolution, infallibly bring on Corruption and Death: For in every Commotion of Nature, or Fever, there are two Kinds of Motions, which ought to be duly adverted to, and carefully distinguished from each other. The one is highly pernicious, and performed from the Circumference to the Centre: This is that spasmodic, and always morbid Motion, which tends to the Destruction of Nature, and the vital Motions, and discovers itself by Coldness, Rigor, Horror, Anxiety, and a small and weak Pulse. The other is of the salutary Kind, succeeds the Spasms, is contrary to them, directed from the Centre to the Circumference, and discovers itself by Heat, and a brisk and strong Pulse: And this is, as it were, the Medicine of Nature, which frees the Body from Destruction, and by means of which these spasmodic Strictures are resolved, the inflammatory Stagnations dissolved, and the excretory Ducts, before closed up and constricted, happily open'd. This is the Motion which the Antients called *the healing Power of Nature*, by the Efforts of which Diseases are subdued, the Patient recovered, and the Danger of Death averted: This is, also, that Motion under which no ones dies, which rather happens under a spasmodic Motion directly contrary to it. The Physician, therefore, who duly knows the Genius, Power, mutual Actions, Effects, and Relations, of these two opposite Motions, is able to act with Prudence in the Management of Diseases, to foretel their Dangers judiciously, and with Reputation to prognosticate their happy Terminations: Such a Physician is, also, qualified for understanding the seemingly uncouth Phrases of the Antients, when they tell us, that a Fever is the Struggle of Nature with a Disease; and that the Patient recovers, when Nature gets the better of the Disorder: For if Spasms, Inflammations, Congestions, and Stagnations of Blood, in themselves mortal, are not in a certain Period of Time, by the hot, solvent, and febrile Motion, digested and dissolved, but remain in their full Force and Vigour, then Nature sinks, and the Patient must necessarily die. But since there are certain Signs, by which the Victory both of Nature over the Disease, and of the Disease over Nature, may be estimated, it is sufficiently obvious, that the Prognosticating Art depends upon certain Principles and Foundations.

We shall, therefore, here briefly consider those Effects and Signs of fatal Spasms, as rarely prove fallacious in acute Disorders; and such as, if they appear about the critical Days, after the Patient is weaken'd by the Disease, and either are not removed, or increase, may render the Physician pretty certain, with respect to the fatal Termination of the Disorder. Nor are these fatal Spasms observable in one, but in many Parts of the Body. If, therefore, a Rigor, accompanied with Coldness, is observed about the Height of the Disease, or recurs often; if the Body is not equally soft, but hard, dry, and rough; if exanthematous Eruptions are, by the Spasms of the Skin, repaid or diminished; if the external Parts are seized with an Horror and Coldness; if Fontanels, or Ulcers, discharge no more Matter; these are bad Signs, and prognosticate the greatest Danger of Death; because, in consequence of the Spasms of the Skin, the Motion of the Blood and Humours to the internal Parts excites dangerous inflammatory Congestions, and hinders the peccant Matter from being expelled by Perspiration. In acute Disorders these Spasms generally affect the Parts subservient to other Excretions; such as those by Urine and Stool, by constricting which, the Urine is render'd thin and aqueous, the Patient collicive, and afflicted with an Hardness and Tension of the Abdomen. Some Patients, in consequence of the Violence of these Spasms, are afflicted with a frequent Desire of discharging their Urine and Excrements.

But the Danger is still greater, when these spasmodic Contractions affect the internal and more noble Parts, subservient to the vital Motions; for the small, the contracted, the quick

and hard, as, also, the unequal and intermittent Pulse, proceed from no other Cause than the spasmodic and convulsive Stricture of the Nerves, which terminate in the Fibres and Coats of the Heart, and always, in the Height of the Disease, prognosticate great Danger. Equal Danger is indicated, by a frequent, uneasy, and difficult Respiration, happening about the critical Times; for, as *Hippocrates*, in his Prognostics, justly observes, that as in all Diseases an easy Respiration is of great Importance to Recovery, so in acute Disorders, a frequent and difficult Respiration is always an unlucky and inauspicious Omen. If the Nerves of the Præcordia are affected with violent Spasms; insupportable Uneasiness, Inquietude, Tossing, and Change of Situation in the Bed, happen; if the nerveo-muscular Membranes of the Oesophagus and Stomach are seized with Spasms, Efforts to vomit, Regurgitations of the Liquors drank, frequent Discharges of a limpid Serum from the Fauces, Difficulty of Deglutition, a Dryness of the Tongue and Mouth, afflict the Patient; and if the Duodenum is drawn into Consent; the whole Body, and especially the Face, is tinged with a yellow Colour: But when more excessive and universal Spasms shake and rack the whole nervous System, the certain Death of the Patient may be prognosticated from the Pinching of his Nostrils, his collapsed Temples, his cold and flaccid Ears, his hollow Eyes, the Coldness and Tension of his Skin about the Forehead, and his black or highly pale Colour; all which make up the *Facies Hippocratica*, an infallible Prognostic of Death. Convulsions of the Nerves, which, according to *Hippocrates*, in *Sec. 4. Aph. 6.* are always bad Signs in acute Disorders, are indicated by the following Signs: If the Patient lies on his Back, with his Knees contracted; if he falls downward to the Feet of the Bed; if he makes bare his Arms and Legs, and tosses them irregularly about him; if his Nails and Fingers are pale; if he gathers the Knaps, or Fingers the Edges, of the Bed-cloaths; if he picks off the Eminences from any adjacent Wall, and is afflicted with a Twitching of the Tendons: When all these appear, they prognosticate a speedy Death.

Tho' most acute Disorders have, for their Cause, an Inflammation of some internal Part, and, for that Reason, are not free from Danger; yet, in the Height and Violence of the Distemper, fresh Inflammations are frequently formed, especially in the Stomach and Membranes of the Brain, and such Inflammations are always terrible and sure Prognostics of Death: These Inflammations, whether separately or jointly, infallibly destroy the Patient, if they appear on the seventh, ninth, or eleventh Day, not only of malignant, petechial, contagious, and Camp-fevers, but, also, in other acute Fevers, such as the Synochus, Burning Fevers, the Purple Fever, the Small-pox, and Measles: An Inflammation of the Stomach is known, if there is a violent Heat, and, as it were, a Sense of Burning, accompanied with an acute Pain about the Præcordia; if these Parts are hard to the Touch; if the Extremities are cold; if the Patient is uneasy and restless; and if every thing he takes, whether Medicines or Drink, is immediately either thrown up by Vomit, or, if retained, creates great Uneasiness, and increases the Anxiety: Sometimes, also, the Inflammation is so great, as to pass through the Oesophagus to the Fauces, which, in this Case, are full of burning painful Pustules, and continually covered with a viscid and putrid Mucus: All which are Prognostics of a quickly approaching Death. Another more dangerous Inflammation, which is generally joined to this, and happens a little before the Death of the Patient, is, that of the Membranes of the Brain, by the *Greeks* called *Phrenitis*, which generally succeeds an obstinate and continual Watching, and an intense Pain of the Head: Its Approach may be predicted from a previous Rigor, thin and copious Urine, a Ringing of the Ears, a strong Pulsation in the Head, and a Discharge of a few Drops of Blood from the Nose: Its Presence is known from the following Signs: The Eyes are red, fiery, and stern; there is an Alienation of Mind; the Words are senseless and incoherent; the Patient makes improper Answers to the Questions put to him, often discharges Tears involuntarily, gnashes his Teeth, and has no longer any Appetite for Drink. If the Phrenitis is succeeded by a Convulsion, it is a pretty infallible Sign of a soon approaching Death. These are the principal Causes which, in acute Disorders, take off the Patients. Persons of sanguine Temperaments, those of choleric or sanguineo-choleric Habits, young Persons and Adults, those of delicate Constitutions, those prone to Anger, those of lean and constricted Habits, or who have indulged themselves in high, rich, and spirituous Living, are principally subject to these acute Disorders, which are produced by violent Inflammations and Spasms.

But, in acute and continual Fevers, there is another Cause of Death, in those who are of a plethoric and spongy Habit of Body, who are phlegmatic, or whose Strength is exhausted, either by Diseases, Hunger, long Grief, or Hemorrhages; for these

these are not so much destroy'd by vehement Spasms, and a terrible Train of Symptoms, as by an Imbecillity and Defect of the Motions, a Want of due Tone in the Parts, and a Loss of Strength. In Cases of this Nature, the Stagnations of the Blood and Humours, in the very Beginning of the Disorder, dispose to a putrid Corruption. And as these Disorders are attended with mild Symptoms, they often deceive the Physician, and elude his Prognostics. Hence, because their Nature is not so evident, but occult, their Events are, with Difficulty, prognosticated, and they are generally class'd among the Fevers of the malignant Kind. Such Fevers are known by the following Signs: They appear with a slight Coldness and Horror; but, in the very Beginning of the Disease, there is an uncommon Loss of Strength, and a languid, frequent, and contracted Pulse. In an erect Posture the Patient easily faints away; the Urine is thin, and without a Sediment; the Patient cannot sleep, though he has a perpetual Propensity to it. This Condition is succeed by a still greater Loss of Strength, and an Alienation of Mind; he complains of no Pain, Thirst, or any great Uneasiness; he is, however, pretty restless, and tosses in Bed; and if his Extremities become cold, and his Pulse begins to be defective, and can no longer be felt in his Wrists, we may justly prognosticate, that the Death of the Patient is not far off. But tho' such Patients are not taken off without an Inflammation of the Stomach, and Membranes of the Brain, yet this Inflammation is not accompanied with violent Spasms, or terrible Symptoms. But a Corruption is easily brought on, which accounts for their Death.

But since all Inflammations generally terminate in a Mortification, or sphacelous Corruption, we shall subjoin some Marks or Signs, by which the Transition from the Inflammation to the Sphacelus may be known. In this Case, therefore, a certain internal Sense of Coldness is perceived; the before-intense and acute Pain about the Head, or inferior Parts, suddenly ceases; the Mind before disorder'd, in some measure, resumes the Exercise of Reason; the Defect of Strength is increased, and the Pulse is either totally deficient, or highly unequal, contracted, and intermittent: The Patient, though before excessively costive, has his Body rendered soluble, or discharges his Excrements involuntarily; his Countenance is unseemly and pale, his Temples, Neck, and Breast, are moist, with chilly Sweat; his Extremities are cold, his Pulse begins to be palpably defective, Rumbling and Noise arise in his Belly; and when the Liquids he drinks descend, they make a Noise, as if they were poured into a deep Vessel: All these are Prognostics of a quickly approaching Death; because, in consequence of the Increase of the Sphacelus, the Tone of the Parts is incredibly destroy'd, and the Strength wonderfully impaired. When plethoric Patients suddenly die of an internal Sphacelus, a few Hours after their Death, their Abdomen becomes surprisingly tumid, large Vesicles arise upon the Surface of the Body, the Face becomes hard and green, the Corps is intolerably fetid, and an ill-smelling Blood is frequently discharged from the Mouth and Nostrils.

There is another Kind of Death incident to those who labour under violent Disorders of the Breast; and that is, Suffocation; which generally takes off those afflicted with a Quinsy, a Peripneumony, a suffocative Catarrh, a convulsive Asthma, and a Dropsy of the Thorax; for these Disorders not only totally intercept the free Ingress and Egress of the Air from the Lungs, but, also, destroy the Circulation of the Blood from one Ventricle of the Heart, thro' the Vessels of the Lungs, to the other. Thus an Angina, possessing the internal Muscles of the Larynx, when there is neither any Pain nor Redness in the Neck and Fauces, but, at the same time, an intense Pain, and violent Fever, quickly destroys the Patient by Suffocation. In this Case, as *Comenius*, in *Lib. 2. Obs. Medic.* has observed, the Eyes are distorted, red, and prominent, as in those who are strangled; the Voice is inarticulate, small, and resembling the Squeaking of Puppies; the Mouth gasps eagerly for the cold Air, a frothy Saliva is discharged from it, and the Tongue hangs out; Liquors drank regurgitate through the Nostrils; the Patient is totally uneasy, frequently leaps out of Bed, and at last dies of a Suffocation and Syncope. A Peripneumony, also, destroys the Patient by Suffocation; for, if nothing is expectorated, if there is a great Difficulty of Breathing, and Restlessness, if the Matter of the Spit is perceived to make a Noise in the Breast, if the Pulse is unequal and intermittent, if the Strength is impaired, and the Patient seized with a Flux, if what is thrown up on Coughing is frothy, and sometimes bloody, and sometimes yellow, if there is a continual Watching, if a Phrenitis succeeds, if the Desire of drawing in the cold Air is excessively great, if the Patient is fond of lying on his Back, and in an erect Posture; for when he lies reclined upon his Face, he is ready to be suffocated; and in this Case the Patient infallibly dies on the fifth, or, at most, on the seventh Day.

Those who die of a convulsive Asthma, are, also, destroy'd by Suffocation; for this Disorder generally arises from a Dropsy of the Thorax, suddenly produced by a Rupture of the Hydatides: When, for Instance, a large Quantity of Water, by its Weight, hinders the Motion of the Diaphragm, and the free Expansion of the Lungs, so that the Air can neither enter them, nor the Blood pass freely through them. A suffocative Asthma is, also, pro-

duced, when the interior glandular Coat of the Bronchia, which is furnished with many large Glands, is so contracted, that the Air contained in the Lungs can neither be expelled, nor fresh Air received. Convulsive Spasms, also, frequently contract the Bronchia so powerfully, that the Patient miserably dies of a Suffocation. In all these Disorders, there is the greatest Anxiety and Restlessness, a tremulous Breathing, an irregular and unequal Pulse, a Rattling and Noise are perceived in the Breast; the Patient cannot rest in one Place; a certain frothy, or bloody Matter is expectorated; and, at last, the Extremities becoming cold, the Patient dies of a Suffocation and Syncope. The like happens in a suffocative Catarrh, which is principally incident to old Persons, those of weak Habits, and Infants; and generally arises from a Palsy of the pneumonic Nerves. In this Disorder, also, the Breath is drawn with the greatest Difficulty and Uneasiness; the Bronchia are filled with an Humour secreted from the Blood; and, because no Spit is expectorated, the received Air makes a great Noise in the Breast, till at last the Patient is suffocated for want of Air. Besides the Signs already mentioned, there are, also, other infallible Marks of Death; such as an intermittent, small, and totally defective Pulse, which frequently happens a few Hours before Death. It, also, often happens, that a violent Uneasiness, accompanied with a Coldness of the Extremities, comes on. In Phthisical Patients, when a considerable Cavity, corroded in the Lungs, contains a large Quantity of Pus, and the Pus, in consequence of a Defect of Strength, ceases to be expectorated, Death soon succeeds.

Having considered those Disorders, which destroy by Suffocation, together with their mortal Signs, we shall now treat of some other acute Diseases, which destroy the Patient, both by Inflammation, and violent Spasms; and consider by what Signs Death may be foreseen and prognosticated in them. If, therefore, a white Purple Fever, which arises from an highly vapid and corrupted Lymph, appears in the End of other Fevers, the Measles, or Small-pox, or in Childbed, after the Lochia are suppressed, it is always dangerous, and generally destroys the Patient by an Inflammation of some of the internal Parts, especially of the Stomach and Intestines. It is a mortal Sign, when a violent Heat of the Præcordia, and a great Uneasiness, are succeeded by a Sense of internal Coldness, accompanied with a small, weak, and unequal Pulse; when the Purple Eruptions disappear; when the Patient faints away, has his Mind disturbed, and his Respiration difficult. I have rarely known any young Person to escape in the Small-pox, if the Disorder seizes him with a violent Pain of the Loins, and a Delirium; if, on the second Day, rough Efflorescences and Spots, like the Purple Fever, appear on the Skin; if, on the fifth and sixth Days, after a total Eruption, the Pulse is not more moderate, but continues equally quick; and if the whole Body is covered with Pustules. But, about the ninth Day, a burning intense Pain of the Hands, produced by the Exulceration, frequently changes all the Symptoms which promised the Recovery of the Patient; for this intense Pain, affecting the whole nervous System, produces the greatest Uneasiness, Tossings, and a subsiding of the Pustules; and afterwards a difficult Respiration, a Disturbance of Mind, Convulsions, and a small languid Pulse, coming on, soon put an End to the Patient's Life.

Those who die by any highly emetic, or purgative Poison, are destroy'd by a sphacelous Inflammation, as is obvious from dissecting their Bodies. The Signs of an approaching Death, in this Case, are, when internal Heats, and violent Uneasiness, are succeeded by a small, unequal, or totally defective Pulse, accompanied with a cold Sweat, a Delirium, and Convulsions; which, when brought on by a purgative Medicine, are by *Hippocrates*, in *Aph. 25. of Sect. 7.* and, in several other Parts, pronounced mortal. Those who die of the Stone, are generally taken off by an Inflammation of the Stomach and Meninges; for, if a Vomiting, and acute Pain, are succeeded by a Fever, accompanied with great Uneasiness, and an insatiable Thirst, and if afterwards an Hiccup, a Delirium, and a Coldness of the Extremities, come on, the Patient will not live long. In a Cholera, if acute Pains and Gripes happen, if Humours, especially of a green Colour, are imperiously discharged by Vomit and Stool, if there is an insatiable Thirst, if the Countenance is yellow or pale, and the Pulse small or contracted, the Disorder is not without Danger. But if the Pulse is totally defective, if the Legs are contracted, the Body covered with a cold Sweat, and the Patient seized with Deliquiums, these are pretty sure Signs, that the Inflammation is degenerated into a Sphacelus. Now the most certain Signs of a Sphacelus are, when the acute Gripes suddenly cease, when the Extremities become cold, and the Strength is greatly impaired. An Hiccup, a Cardialgia, Heat, and Uneasiness about the Præcordia, generally precede this Condition, and indicate a fatal Inflammation of the Stomach. In the Iliac Passion, where the Pains are intense, and accompanied with Costiveness, and a continual Vomiting of serid Matter, if an Hiccup, a Delirium, cold Sweats, Refrigeration of the Extremities, and Convulsions of the Nerves, come on, these are certain Signs of an approaching Death, as *Hippocrates*, in *Sect. 7. Aph. 10* has justly observed. Violent convulsive Colics take the Patient off in the same manner; for, in this Disorder, there is often such an intense Pain in the Intestinum Rectum,

produced by the stagnant hæmorrhoidal Blood, that this Intestine is not only seized with an Inflammation, but, also, a mortal Sphacelus; under which, in consequence of the putrid State of the Intestine, highly fetid Excrements are discharged; a frequent and weak Pulse, accompanied with a great Loss of Strength, succeeds; and the Sphacelus often spreads to the external Parts, and the Scrotum; after which, the Patient is seized with Deliquiums, and soon dies.

'Tis certain, that many Women die either during, or after Labour; for which Reason we shall consider some of the most fatal Presages and Prognostics, in Cases of this Nature. If, therefore, a Woman, in consequence of an unnatural Situation of the Fœtus, especially when too large, is, for some Days, successively racked and fatigued with violent Pains, accompanied with internal Heat, which may be known by the Celerity of the Pulse, it frequently happens, that in Labour, or after it, the Strength being suddenly lost, she falls into a kind of Deliquium, or Disorder resembling an Apoplexy, and can by no means have Strength and Life restored to her: In such a Situation, it is a Sign of Death, when the Disorder lasts for some Hours, and the Patient cannot be roused by the most penetrating Medicines, such as Spirit of Sal Ammoniac, prepared with Quick-lime, and mixed with Oil of Rue, put into the Nostrils. If the Face, during the Paroxysm, remains red, it is a Sign, that the Blood, too impetuously convey'd to the Brain by the Spasms, has produced this Disorder, in every respect so like an Apoplexy; and, after the Death of the Patient, a bloody fetid Serum is generally discharged from the Mouth and Nostrils. If, after the Fœtus is dead in the Uterus, the Mother dies in Labour, the Child is frequently expelled, in consequence of the Relaxation of the Passages, and the internal fermentative Motion. Those Women who die in Childbed, for the most part, suffer great Pains from a Retention of the Lochia; but if these Pains are not succeeded by the Lochia, but rather accompanied with a Flux, a fatal Inflammation of the Uterus, and a Fever, generally succeeds. Such an Inflammation is known from a burning Heat, reaching from the inferior Parts to the Region of the Heart; and, if it is accompanied with great Uneasiness, Loss of Strength, Restlessness, and a total Loss of Appetite; if afterwards there is an internal Sense of Cold, with an Horror, a frequent, small, and weak Pulse, and if the Sight begins to grow dim, these are Signs, that Death, proceeding from a Sphacelus, is not far off. Many Women in Childbed die with the full Use of their Reason, which frequently returns to them a few Hours before their Death; so that unskilful Persons conclude them to be in a fair way of Recovery, whilst the more skilful and judicious know, from the State of the Pulse, that Death is approaching. If, in consequence of a large Effusion of Blood, after Labour, and in Childbed, a slow Heat, accompanied with a frequent and weak Pulse, and which is not allay'd in the Morning after Sleep, is brought on, and attended with a total Loss of Appetite and Strength, the Patient generally dies of a Syncope, about the End of Childbed, that is, in the sixth Week.

In an exulcerated Cancer, scarcely any Patient is preserved, on account of the violent Corruption, which is indicated by the black, thin, and highly fetid Sanies. In this Case, the Patient is afflicted with a slow Fever, and the Strength daily decreases; the Sleep, also, is uneasy, restless, or none at all, till, at last, a Deliquium and Death ensue. Persons are sometimes suddenly taken off by the Retrocession of Inflammations of the external Parts; such as Erysipelas, and the Gout, either in the Feet or Hands. Nor does this happen in any other manner, than by an Inflammation of the Stomach and Intestines. But 'tis still more dangerous, if, in the Plague, Carbuncles and Buboës recede, or are not sufficiently expelled; for, in this Case, the Death of the Patient is certain, since he is seized with an Horror, becomes restless and uneasy; an Heat seizes the Region of his Stomach, whilst his Extremities are cold; he has a Desire to vomit, or is seized with an Hiccup; after which, the Patient is afflicted with a Perturbation of Mind, and dies of a Syncope. If any one dies of an excessive Loss of Blood, which may happen in Miscarriages, a Spitting of Blood, a Vomiting of Blood, the Morbus Niger of Hippocrates, or violent Hemorrhages in Fevers, such a Patient is taken off by a Deliquium and Syncope. But 'tis to be observed, that, for the most part, Death is preceded by an insatiable Thirst, an Inclination to vomit, a weak and frequent Pulse, and Convulsions of the Extremities, which are Signs, that the Blood, stagnating in the internal Parts, such as the Head and Stomach, still excites some Spasms; for Thirst generally arises from a spasmodic Stricture of the glandulous Coat of the Oesophagus. The Disorders of which Children die, are generally of the spasmodic and convulsive Kind, and bring on an Inflammation and Sphacelus, especially of the Stomach, Intestines, or Head; for, in consequence of the acute Pains, they easily fall into Epilepsies and Convulsions, Fevers and Asthmæ. If one epileptic Fit succeeds another, and if the Patient was before very colic, he spontaneously discharges highly fetid and black Excrements: If the Voice becomes shrill and interrupted, and the whole Body is intensely hot, we may prognosticate, that Death is not far off.

We now come to consider the Presages of Death in some chronic Disorders, the most considerable of which are the Dropsy, a Cachexy, the Scurvy, a Consumption, an Hætic, a Phthisis, and a Tabes. Those who are destroyed by these Distempers, die slowly, but certainly; because, though the Corruption of the Viscera, from a Stagnation or Extravasion of the Humours, proceeds slowly, yet it cannot be removed by any means. The Signs of a Corruption of the Abdominal Viscera, and, consequently, of approaching Death, are, a Loss of Appetite, and a Loathing of such Aliments, as the Patient was fond of, when in Health. If the slow Fever increases, and the Pulse becomes quicker, these Signs always denote an internal Corruption; which is, also, indicated by a Loss of Strength, a great Difficulty of breathing, and restless Sleep, which rather weakens, than refreshes. If these Symptoms afflict the Patient long, and yield to no Medicine, they are certain Prognostics of Death, especially in old Persons, or those, who, in consequence of a previous Disorder, have fallen into such a chronic Disease. These are some of the most common Signs of Death in chronic Disorders. But we shall add some, peculiar to certain Diseases of the chronic kind. As for a Phthisis, then, the Signs of Death in this Distemper are; if the whole Body is consumed; if a continual Hætic Fever afflicts the Patient; if the Face is red, and the Body preternaturally soluble; if there are colliquative Sweats, and cedematous Swellings of the Feet; if the Spit is suppressed, the Nails pale, the Eyes sunk, and the Nostrils sharp and pinched. In case a Dropsy succeeds a long-continued Asthma, and Palpitation of the Heart, or an Induration of the Liver, a Quartan, we may pretty certainly prognosticate, that the Patient cannot be preserved; and if the Urine is small in Quantity, turbid, and red, it is a very bad Sign. If the superior Parts become slender, and the Face assumes a yellowish Colour, we may pretty infallibly prognosticate Death some Months before it happens; but the Patient is infallibly destroyed, if the Fever is increased, and the Respiration rendered more difficult. Those who frequently, and especially after violent Exercise of the Body, or Commotions of Mind, perceive an obstinate Palpitation of the Heart, and afterwards fall into a convulsive Asthma, a Spitting of Blood, or a Dropsy, may have their Death prognosticated a long time before it happens, especially if they are afflicted with Deliquiums; for the Cause of all these Disorders is a polypose Concretion in the Vessels of the Heart, which cannot be removed by any Medicine; and which, with the Concurrence of other Causes, generates these terrible Disorders; and if Deliquiums, also, produced by the Polypus, happen frequently, and without any manifest Cause, the Patient generally dies suddenly. This Doctrine is, also, confirmed by the Authority of Hippocrates.

When a sphacelous and mortal Corruption affects the Liver, there is a great Loathing of Food, especially of Flesh; there is a frequent and insatiable Thirst, a Fever, a Loss of Strength, an Hiccup; now-and-then Serum, or yellow Bile, is discharged by Vomit, and the Body is gradually consumed. In such Cases, after Death, I have observed the Liver evidently sphacelous and black. An Exulceration of the Stomach, also, produces a long and mortal Disorder, and is known, if a great Uneasiness and Vomiting succeed Eating: And these Misfortunes are increased by any acrid and saline or spirituous Medicines; the Body is wasted, the Pulse is always quick, the Extremities seized with a Rigor, and sometimes with an Horror; Fontanels are dried up, and the Sleep is little and restless; such Patients die in the third or fourth Month, and their Death may be prognosticated a long time before it happens. In a Cachexy, if the whole Body becomes tumid, inflated, and pale; if there is a Loathing of Food; if the Patient frequently vomits a fetid Matter, and discharges little by Stool; if the Urine is crude, and in small Quantity; if the Respiration is difficult, and the whole Body fetid; if afterwards a frequent Pulse, and a more difficult Respiration, happen, the Patient's Death, in some Months, may be prognosticated; and it happens the more infallibly, the more Errors in Diet, or excessive Drinking, the Patient commits; or the more he is afflicted with long Grief.

We shall, farther, subjoin some useful Cautions with respect to forming Prognostics. Spasmodic chronic Disorders are, therefore, to be carefully distinguished from those of the acute Kind; for, in hypochondriac and hysteric Disorders, such Symptoms occur, as in acute Disorders prove mortal, but are less dangerous in the former; for nothing is more frequent in hypochondriac and hysteric Affections, than for the Patient to be afflicted with violent Uneasiness, a Difficulty of Breathing, a Coldness of the Extremities, a thin and watry Urine, a small and weak Pulse, and frequently violent Deliquiums; which Symptoms are, however, soon carried off, without any Danger. The Stages of Distempers are, also, to be carefully distinguished; for, of all the mortal Signs already enumerated, if some, or even a considerable Number, should appear in the first Days of a Disorder, those would act inconsiderately, who should

should thence conclude, that Death was at hand. But it is otherwise, if, after the Strength is, for several Days, exhausted by excessive Heat, Want of Appetite, Anxiety and Pain, those fatal Spasms, and the Symptoms produced by them, appear; especially at those times, on which the Disorder is generally terminated in a salutary manner; which is, for the most part, on the odd Days, that is, the seventh, ninth, and eleventh Day. Great Regard is, also, to be had to the Habits of Patients, whether they are of weak and languid, or of vigorous and robust Constitutions, since the former are always in greater Danger, than the latter. Among the Weak, we reckon old Persons and Infants, those of spongy full Habits, those who have small Vessels, those sprung from weak and infirm Parents, and those weakened by previous Disorders, immoderate Hæmorrhages, long Hunger, the Affections of the Mind, Grief, Care, and Thoughtfulness. Among this Class we, also, reckon Childbed Women, and those, who, in consequence of a bad Regimen, and a Suppression of the Excretions, have contracted a Redundance of impure Juices in their Vessels; for, in all these tender Habits, the Pains and Inflammations easily degenerate into a mortal Sphacelus. We ought, also, carefully to observe, whether the Symptoms, which appear, are excited by external Causes, such as Anger, a Fright, Refrigeration of the Body, improper Aliment, or Medicines of a drastic or virulent Quality; all which, in dangerous Diseases, and in Persons of weak Habits, are of such a Nature, as to prove mortal, and accelerate the Death of the Patient. But if, in less dangerous Diseases, and in robust Habits, these terrible Symptoms appear, they are not forthwith to be pronounced absolutely mortal. And, lastly, in order to form a right Prognostic, it is of great Importance, duly to consider the Beginning of the Disorder; for every Disease, which, in the Beginning, destroys the Strength, and is accompanied with a frequent Pulse, portends no Good, because it clearly discovers a Loss of Strength, an Impurity of the Juices, and a fatal Dyscrasy of the Blood. *Frederic Hoffman.*

PRÆSCRIPTIO. A Prescription.

PRÆSEPIA, or PRÆSEPIOLA. The Sockets in the Jaw-bones, in which the Teeth are contained.

PRÆSERVATIVA REMEDIA. Remedies, which preserve Health, and prevent Diseases.

PRÆSERVATORIA INDICATIO. The Preservatory, or Prophylactic Indication. See **INDICATIO**, and **FIBRA**.

PRAMNIOS, πρᾶμνιος. A Sort of black and austere Wine, mentioned by *Hippocrates*, in his Treatise of the Disorders of Women.

PRASINUM VIRIDE, is the same as *Flos Æris*. See **Æs**.

PRASINUS, or PRASOIDES; the same as **PORRACEUS**.

PRASIS is explained by *Rulandus*, *Creta viridis*.

PRASITES. An Epithet for a sort of Wine described by *Dioscorides*, L. 5. C. 58. It is made by infusing the Leaves of Horehound in fermenting Must.

PRASIUS. *Offic. Charlt. Foss. 33. Calc. Mus. 217. Kentm. 47. Boet. 203. Worm. 95. Aldrov. Mus. Metall. 897. Prasus sive Prasius. De Laet. 42. Lapis, Prasius dictus, aliis, Plasma, aut Nilinum, aut Leda. Lapis Nephriticus viridis Mali Aurantii foliorum virore. Cup. Hort. Cath. Supp. 2. 51. THE GREEN STONE.*

It is green for the greatest Part of it, but is seldom without black, and sometimes white Spots. Many take it for the Mother of the Emerald, because this Gem is sometimes found in it. The *Prasus* has the Virtues of the Emerald, but in a lower Degree.

PRASION, πρᾶσιον. White Horehound.

PRASUM, πρᾶσιν. A Leek.

PREHENSIO. A Name for the **CATALEPSIS**.

PREMNON, πρᾶμνον. The Extremity of the White of the Eye.

PRESBYTÆ. Vision is commonly divided into three Sorts; the good Sort, that of the Myopes, and that of the Presbytæ.

A Person is said to enjoy a good Sight, when he can see to read at a Foot Distance: In this Case the Crystalline Humour is in its most perfect State, and such People can distinguish distant Objects, like the Presbytæ, but more accurately. This Species of Vision has three Degrees, or Focuses; one at the Distance of half a Foot, another at a Foot Distance, and a third a little farther.

The Sight of the Myopes has a very short Focus; they can see distinctly, when the Object is near, and require little Light to read. At a Distance they see confusedly, and Objects considerably remote they cannot perceive at all. This Defect of the Sight is attributed to the too great Convexity of the Crystalline.

The Myopes have, also, three Degrees or Focuses. The first is, when they cannot read, without bringing the Book

close to the Nose; the second hold it two or three Fingers-Breadth farther; and the third hold it at half a Foot Distance, or more. In order to distinguish distant Objects, the Myopes should use concave Glasses.

The Presbytæ have their Focus very long; they observe remote Objects distinctly, but those which are near, confusedly: This Defect of the Sight is imputed to the too great Flatness of the Crystalline. The Presbytæ have, also, three Degrees or Focuses; one at the Distance of a Foot and an half; another at two Feet and an half; and the third at a greater Distance: Upon this account they cannot read without Spectacles. This Species of Vision is common among the Aged, and is directly contrary to that of the Myopes.

Of these three Species of Sight, two of them are subject to Alteration. The good Sort may sometimes be changed into that of the Myopes, especially in those who read much, or apply themselves to fine Work; and in Old-age it is liable to change to that of the Presbytæ. The Sight of the Myopes admits of no Variation; and that of the Presbytæ sometimes becomes good. These different Changes of Vision proceed from the different Degrees of Convexity, of which the Crystalline Humour is capable. When the nutritious Juice, necessary to maintain the Convexity of the Crystalline, is sufficiently fluid to pass through the Extremities of the finest Vessels belonging to it, then the Sight is perfect. But, if the Juice is too thick, it cannot enter these Vessels in a sufficient Quantity; for which Reason the Convexity will be diminished, in proportion to the Tenacity of the Juice. *St. Yves.*

PRESIS, or PRESMA, πρᾶσις, or πρᾶσμα. *Galen* explains this Word, Inflation.

PRESMUCHUM, or PRESMUKIS. *Cerufs. Rulandus.*

PRESSORIUM. A Press. *Rulandus.*

PRESSURA. Pressure, or Compression. *Pressura Gentium*, in *Paracelsus*, is the Venereal Disease.

PRESTER, πρεστής. The external Part of the Neck, which is inflated by Anger. *Gorræus.* But *Prester* is, also, the Name of a Serpent, the same as *Dipsas*.

PRIAPEIA. A Name for the **NICOTIANA MINOR**.

PRIAPISCOS, πριαπισκος. The Name of a small Piece of Wood, which constitutes a Part of the *Scamnum Hippocraticum*. *Priapiscos*, also, imports a Tent made of Linen, rolled up in the Form of a Penis. *Paul. Ægineta, Lib. 3. Cap. 24.*

PRIAPISMUS, πριαπισμύς. A Priapism. See **SATYRIASIS**.

PRIAPOLITHUS. The Name of a Stone mentioned by *Borelli*, found about *Castro* in *Italy*, resembling in Shape the Penis.

PRIAPUS, πριαπός. A Penis.

PRIMÆ VIÆ, The first Passages; that is, the Stomach, and Intestinal Tube.

PRIMITIÆ. The Waters which precede the Fœtus at the Birth.

PRIMORES. A Name for the *Dentes Incisores*, or Fore-teeth.

PRIMULA VERIS.

The Characters are;

The Root is perennial; the Leaves are oblong, and wrinkled; the Calyx is quinquesid, pentagonal, and soft: In this Calyx is seated a monopetalous Flower, shaped somewhat like a Salver, with its Margin divided into five Heart-shaped, bifid, Segments; this Flower is furnished with five Stamina, which arise from the Inside of its tubulous Part. The seminal Vessel is an oblong Shell, concealed in a Calyx, furnished with a long Tube, and gaping at its Apex; the Seeds are roundish.

Boerhaave mentions twenty Species of *Primula Veris*; the first twelve of which are of the Class of those which bear a single Flower on every Stalk, and are enumerated as follows;

1. *Primula Veris*; pallido flore; humilis. *Boerb. Ind. A. 198. Primula Veris.* *Offic. Primula Veris minor. Ger. 636. Emac. 781. Primula Veris vulgaris. Park. Theat. 535. Raii Hist. 2. 1080. Synop. 3. 284. Primula Veris, floribus ex singularibus, majoribus, simplicibus. J. B. 3. 497. Tourn. Inst. 125. Verbasculum sylvarum majus, singulari flore. C. B. P. 241. THE PRIMROSE.*

The common Primrose has large wrinkled Leaves, of a dark Green above, and whiter underneath, broad and round at the End, and growing narrower towards the Roots; the Flowers arise directly from the Root on long slender Foot-stalks, consisting of single Tubes spread out at Top, and cut into five large, round Segments, of a pale-yellow white Colour, set in loose Calyces. The Root is small and fibrous. It grows in Thickets, and under Hedges, and flowers in *March* and *April*. The Flowers and Roots are used, though but seldom.

The Flowers are commended by some, as good against Disorders arising from Melancholy, and phlegmatic Humours; the Juice

Juice of the Root is sometimes used as an Errhine to 'purge the Head of tough slimy Phlegm. *Miller's Bot. Off.*

2. *Primula Veris*; Constantinopolitana; flore albo. *T. 125. Verbasculum Turcicum sive Carchicec Turcatum.* M. H. 2. 555.

3. *Primula Veris*; Constantinopolitana; flore dilute carneo. *T. 125.*

4. *Primula Veris*; Constantinopolitana; flore dilute purpureo. *T. 125.*

5. *Primula Veris*; Constantinopolitana; flore majore purpureo. *T. 125.*

6. *Primula Veris*; Constantinopolitana; flore minore purpureo. *T. 125.*

7. *Primula Veris*; Constantinopolitana; flore miniato. *T. 125.*

8. *Primula Veris*; Constantinopolitana; flore luteo. *T. 125.*

9. *Primula Veris*; Constantinopolitana; flore flavescente. *T. 126.*

10. *Primula Veris*; Constantinopolitana; flore obsolete pallido. *T. 126.*

11. *Primula Veris*; Constantinopolitana; flore obsolete. *T. 126.*

12. *Primula Veris*; flore pleno. *H. Eyst. Vern. O. 1. F. 5. Fig. 3. Verbasculum, sylvestre, magno, plenoque flore.* C. B. P. 242.

The second Class contains those Species, which, on one Stalk, bear a Multitude of Flowers, disposed somewhat in the Form of an Umbella; they are as follows:

1. *Primula Veris*; umbellata; odorata; pratensis. *Boerb. Ind. A. 199. Paralysis. Offic. Paralysis vulgaris pratensis, flore flavo, simplici odorato.* Park. Parad. 244. *Primula Veris major.* Ger. 635. Emac. 780. Raii Hist. 2. 1081. Synop. 3. 284. *Primula Veris odorata, flore luteo simplici.* J. B. 3. 495. Tourn. Inst. 124. *Verbasculum pratense odoratum.* C. B. P. 241. COWSLIPS, or PAIGLES.

The Cowslip is well known to have somewhat soft, large, wrinkled Leaves, green above, and whitish and hairy underneath, and full of Veins, broadest at the End, and growing narrower towards the Stalk; among these arise one or two round smooth Stalks, five or six Inches high, bearing on the Top several yellow Flowers, in a kind of Umbel, each on a long Foot-stalk, and set in a loose whitish pentangular Calyx; the Top being round, and cut into five Segments, with Saffron-coloured Spots in the Middle of each; the Part inclosed in the Calyx being hollow, and Pipe-fashioned; they are of a pleasant sweet Scent. The Root is composed of several Strings or Fibres, arising from a small Head; it grows in moist Meadows and Marshes, and flowers in April. The Leaves sometimes, but the Flowers are mostly used.

They are accounted cordial and cephalic, and beneficial to the nervous System, and serviceable against the Epilepsy, Palsy, Apoplexy, and Pains in the Head; they are anodyne, and supposed to have a Tendency to procure Sleep, for which Purpose a Tea is sometimes made of the Flowers. The Leaves are used in warming, strengthening Ointments, particularly the *Unguentum Nervinum*.

Official Preparations from Cowslips are, the simple Water, the Syrup, and the Conserve. *Miller's Bot. Off.*

The Flowers of this Plant, being analysed, yield a good deal of Acid, a little urinous Spirit, no concreted volatile Salt, and a pretty deal of Oil and Earth; these Flowers have a volatile, aromatic, oily Salt, pretty much tempered. They are very aperitive, and good to restore the Course of the Spirits. In the Apoplexy and Palsy, *Tragus* prescribed the Conserve, or distilled Water, of these Flowers. To draw the Spirit from them, they must be sprinkled with common Salt, left to ferment some Days, and then distilled; this Spirit has the same Virtues. The Leaves and Roots are very aperitive. *Martyn's Tournesort.*

The Plant is heating and drying, and has something of an acrimonious and bitterish Taste; it is, also, somewhat astringent, and has an anodyne Virtue. The principal Uses, to which it is applied, are in cephalic Disorders, and the Arthritis, and other Pains and Affections of the Joints.

2. *Primula Veris*; pallido flore; elatior. *Boerb. Ind. A. 199. Tourn. Inst. 124. Herba Petri. Offic. Primula pratensis inodora lutea.* Ger. 635. Emac. 780. Raii Hist. 2. 1081. Synop. 3. 284. *Primula Veris caulifera, pallido flore inodoro aut vix odora.* J. B. 3. 496. *Paralysis altera odorata, flore pallida polyanthos.* Park. Parad. 244. *Verbasculum pratense aut sylvaticum inodorum.* C. B. B. 241. GREAT COWSLIPS, or ORSLIPS.

They grow in Woods and Thickets, and flower in April. The Leaves, infused a Night in White-wine, are recommended against the Anasarca. *Dale.*

3. *Primula Veris*; geminato flore. *H. Eyst. Vern. O. 1. F. 5. Fig. 4. Verbasculum proliferum.* C. B. P. 242. M. H. 2. 554.

4. *Primula Veris*; Anglicana; flore pleno. *H. Eyst. Vern. O. 9. F. 3. Fig. 2. Verbasculum, hortense, multiplex.* C. B. P. 242.

5. *Primula Veris*; hortensis; umbellata; caule & flore folioso, coccineo, majore.

6. *Primula Veris*; hortensis; umbellata; flore folioso; luteo, minore.

7. *Primula Veris*; umbellata; odorata; hortensis; simplicis varietas uberrima pro varietate jucundissima coloris multiplicis.

8. *Primula Veris*; umbellata; geminato flore abundans & grata ratione pigmenti discrepantis copia. *Boerb. Ind. alt. Plant.*

It is called *Primula Veris*, because it flowers in the Spring before all other Plants. It is recommended in a Palsy proceeding from Want of Spirits. The Leaves are eatable in Salads, or boiled with other Greens; and their expressed Juice is good against the Palsy, for it is restorative; the Flowers have a very sweet and innocent Smell, and are dissolvent, without Danger of an Inflammation. The Leaves and Roots are aperitive, and effectual in Apoplexies and Rheumatisms, being comfortable and strengthening to the Nerves and Joints; externally used, they are of Service in Tumors arising from the Bites or Stings of venomous Animals, and in the Gout. Vinegar impregnated with the Roots, and attracted into the Nostrils instead of an Errhine, is an admirable Remedy for the Tooth-ach. A Conserve of the Flowers is very good for the Palsy; *Willis* and *Sydenham* prescribe it in acute Diseases. The Flowers, when young and tender, are used instead of the Flowers of the Tilia; for they procure Sleep, and are of an anodyne Quality. *Hist. Plant. adscript. Boerhaav.*

PRINCEPS. A Name for the *Intestinum Rectum*. *Principes Dies* are Critical Days.

PRINCIPIA. The Principles, or Elements, of Bodies.

It is impossible to discover the Virtues of any Body, or how mixed Bodies of different Kinds stand related to the human Body, either for the Preservation of its Functions entire, the restoring them when lost or impaired, or for the total Destruction thereof, till we know the Principles of which they consist, and, likewise, the Mixture and Proportion of such Principles in Bodies, to which their Effects are principally owing. Wherefore, having discovered, by various Ways, the Parts into which a true chymical Analysis resolves Bodies, we must look upon such simple Parts, into which all mixed Bodies are capable of being resolved, and of which they seem to be compounded, as their true and genuine Principles. The Antients, having observed, that, in analysing all Bodies whatever, they obtained a Spirit, or Mercury, Sulphur, Salt, Water, and Earth, concluded the Number of Principles to be five.

If Wine, for Instance, be distilled in a proper Alembic, a burning Water, or Spirit, will first arise, next an insipid Water, which they call *Phlegm*, a thick, viscid Mass alone remaining in the Still. This they put into another Vessel, or Retort, which being exposed to a more intense Heat, a small Portion of Phlegm comes over first; then an acid Water, which, according to them, is still Spirit, or Mercury; next, a fat, oily Substance, called *Sulphur*. What remains still in the Retort, is burnt to Ashes in an open Fire. These Ashes are thrown into an earthen Vessel, with a proper Quantity of boiling Water, which they impregnate with Salt. This Water, being tread through Cap-paper, and afterwards evaporated, leaves the Salt at the Bottom. The other Part of the Ashes, which the Water does not take up, is termed *Earth*, or *Caput Mortuum*.

Of these five Substances the Chymists have reckoned two to be passive, Water, and Earth; and three active, Spirit, Sulphur, and Salt; and on these last they thought the whole Virtue and Efficacy of the mixed Body depended. In this Analysis we may observe, that there is a twofold Spirit; one oily and inflammable, which rises first by a gentle Heat, and is termed *Spirit of Wine*; another acid and penetrating, like that of Vinegar. Besides, these Chymists give the Name of *Spirit* to other penetrating, volatile, or urinous Liquors, obtained from the Parts of Animals, such as the *Spirit of Urine*, *Hartshorn*, *Blood*, and such-like Substances: But the later Chymists have banished these Spirits from the Number of their Principles, as being nothing else than Sulphur, or Salt, dissolved in Water. Thus Spirit of Nitre, and others of that Kind, are only acid Salts in Water; Spirit of Hartshorn, or Urine, alkaline Salts; and Spirit of Wine, or of Turpentine, an ethereal, attenuated Oil.

Some of the Moderns deny, likewise, that either Sulphur or Salt deserve the Name of Principles, or Elements; as not being the most simple Substances producible by Chymistry. For Sulphur, when treated with due Care, may be resolved into Salt, Water, and Earth; as is evident by distilling fetid distilled Oils several times with Quick-lime; which, by this Treatment, yield,

P R I

yield, in large Quantities, a volatile Salt dissolved in Phlegm, together with a Caput Mortuum, or Earth. Likewise ethereal Oils are only fat, thick Oils like that of Olives, attenuated by Salts, and dissolved in Water, as may be proved by the two following Experiments: If Oil of Olives, or any other of that kind, be mixed with a fermenting Liquor, such as a Solution of Honey in Water, the Whole will be converted into an inflammable Spirit. And if a Quart of Spirit of Wine, diluted with six Quarts of common Water, be exposed in a cold Plate to the open Air, the volatile Salts will fly off, and leave Drops of Oil swimming at the Top, which are, in every respect, the same as Oil of Olives, or Almonds.

Salt has no better Title to a Principle, than Sulphur, because it may, by proper Management, be at length reduced to Earth and Water. Thus Nitre, by Distillation, may be almost wholly reduced to an acid Spirit; but, if it be burnt with Tartar, or Charcoal-dust, it becomes an alkaline Salt, called *fixed Nitre*.

This, if suffered to run per Deliquium, and afterwards filtered through Cap-paper, will leave a large Quantity of Earth behind; and, if the same Liquor be distilled to Drinefs, a large Quantity of insipid Water will come over, and the Salt remaining at the Bottom of the Retort will have lost a great Part of its first Quantity. If this Operation be repeated, nothing will at length remain, but Earth. Again, the Vitrification of alkaline Salts seems to be nothing, but the Conversion of them into Earth; for Glass has no Qualities different from those of Earth.

What we have proved by Experiments made by resolving Bodies, may be further confirmed by others relating to the Formation and Composition of them, and particularly by *van Helmont's* famous Experiment on the Willow, which has been often quoted by succeeding Authors. He took about two hundred Pounds of Earth dried in an Oven, and put it into a Vessel covered with an iron Lid full of Holes. In this Earth he set a Branch of Willow, weighing about five Pounds, which soon took Root, and grew so much, that in eight Years time it weighed an hundred and sixty Pounds, the Earth it stood in, having, during all this Time, lost only a few Ounces; so that the whole Increase of the Tree must have been owing to Rain-water, and a very small Proportion of Earth, and the Salts and Sulphur therein must have been composed of these two Elements alone. The Experiments of this kind, made by the illustrious Mr. Boyle on small Sprigs of Mint, Marjoram, Pennyroyal, Baum, and the like, set in Phials filled with clear Water, are more to be depended on. They increased in a short time to double their first Weight, and, being afterwards distilled, they yielded the very same Principles, as they would have done, had they grown in the most proper Soil; from whence it is plain, that Salt and Oil owe their Original to Water and Earth.

Water and Earth, in the strictest Sense, deserve the Name of *Principles*; but, in the Formation of mixed Bodies, a third Principle must necessarily concur with them; for as they are of themselves wholly inactive, something must be supposed to give them their Motion and Activity. Without this, Water would immediately turn to Ice; and as there are few Bodies, out of which Fire may not be drawn, it is evident, that there must be some active, moveable Principle in them all, to which the Motion of the other Parts is to be ascribed. Therefore, though this Principle should not fall under our Senses in the same manner as the others, that can be no Reason for doubting of its Existence, since it must concur in the Composition of all Bodies, which, if they were made of Water and Earth alone, would remain for ever without any Virtue or Energy. This they must receive from another Principle, and, according to the different Combinations of all the three, Bodies are formed with different Properties and Powers. We acknowledge, therefore, three simple Substances in Bodies, which are properly Elements, or Principles: One active, which may be termed *Fire*; and two passive, Water, and Earth. From the most simple Union, or Connection of these three, Salt arises, which is to be looked upon as the most simple of all mixed Bodies. The next to that is Sulphur, or Oil, made by the Union of the three Principles, and of Salt.

Thus far concerning the Principles of Bodies in general: We now proceed to consider each of them in particular.

FIRE CONSIDERED AS A PRINCIPLE.

We reckon elementary Fire the first Principle of Bodies, as being that, from whence all the rest receive their Activity. It is a simple and most subtle Body, in a continual swift Motion, filling, and easily permeating, the Pores of all other Bodies. Its immense Subtlety is evident from this, that it penetrates all Bodies whatsoever; and its swift Motion, from that Rapidity which it is capable of communicating to them. Its Force is in proportion to the Quantity of it any-where collected. In the Sun, which may be looked upon as a vast Congeries of this Substance, its Motion is most violent. In culinary Fires, the Quantity and Motion of it are not so great, but still greater, than in spirituous and volatile Liquors, where it is hardly to be

P R I

perceived, except when they are set on Fire. Not only all Motion, but, also, Heat, proceeds from it, which, as it exists in Bodies, is nothing but the excessive Motion of their Parts. It is, also, too subtle and active ever to be collected pure in Chymical Analyses; where-ever it is found, it is always united with Water and Earth, in Salts and Sulphurs; and is sometimes concentrated with Bodies in so great Quantities, as considerably to increase their Weight, as is evident in calcined Antimony, in which there is an Addition made of almost a Fifth Part.

WATER CONSIDERED AS A PRINCIPLE.

Elementary Water is a simple, liquid, insipid, inodorous, pellucid Substance. Its Fluidity is owing entirely to the Action of Fire; and, when that Action is very great, its Parts are actually divided, and the Whole turned to Vapour; but, when it is very small, they cohere strongly, and turn to Ice. This Element the Chymists call *Phlegm*, and it may be conceived to consist of small, smooth Particles, of an oblong or oval Figure, and perfectly rigid or inflexible. From the Minuteness of its Particles, it easily penetrates the Pores of almost all Bodies. An oval Figure seems more agreeable to the Fluidity and Motion of Water, than a spherical, and, likewise, to the Solidity we observe in Ice; the Points of Contact being too few, in spherical Bodies, to form so strong a Cohesion. Were its Particles angular and flexible, they would be too weak to penetrate and dissolve Salts, and would, likewise, be too much resisted; but, as their Surface is smooth, they can easily enter the Pores of Salt, and afterwards they easily separate their Parts, that is, dissolve them by their Rigidity, and oval Figure. The Want of Taste or Smell in Water seems to proceed from the Smoothness, Obtuseness, and Smallness of its Particles, which cannot vellicate the Nerves of the Tongue and Nostrils. The Fluidity of Water arises from the Smallness, Smoothness, and Figure of its Particles, and from the easy Motion thereof by the Fire contained in their Interstices. Without the Action of Fire separating these Particles, and keeping them in continual Motion, their Fluidity would presently be lost, how much soever their Structure may dispose them to it, and they would become one solid Mass. On the other hand, if the Action of Fire upon them be very great, they are farther separated from one another, and fly off in Vapour or Smoke. In fine, Water is transparent, because its Pores are so disposed, as readily to transmit the Rays of Light.

EARTH CONSIDERED AS A PRINCIPLE.

Elementary Earth is the same with the *Terra Damnata*, or Caput Mortuum, of the Chymists; being a simple, friable, porous Substance, without Smell or Taste, consisting of Particles of no regular Figure, and altogether unfit for Motion. The Porosity of Earth seems to arise from the irregular Figure of its Particles; and as these Particles often touch one another only by their Angles, the whole Mass must necessarily be friable. The Want of Taste and Smell seems to be owing to their Inaptitude for Motion.

In the Analyses of Bodies, the last Thing is always this Principle of Earth; and, in their Composition, it seems to serve as a Basis or Foundation for the other Parts of the Mixture; and to it the Drinefs, Solidity, and Hardness, of Bodies are, in a great measure, to be ascribed.

SALT CONSIDERED.

Salt, as has been said, is a mixed Body; but I chuse to introduce it immediately after the Principles, because, in all the common Analyses of Bodies, it is obtained entire, and a great deal of Pains and Accuracy is required to decompose it, or reduce it to its Principles. It is, also, the sole Origin of the Taste, Smell, and many other Properties of Bodies. It may be defined to be a mixed Body, formed by the Concretion of Fire, Water, and Earth, into a solid rigid Substance, soluble in Water, and fusible by Fire. As its Particles may be conceived to cohere by large Surfaces only, Salt cannot be friable like Earth; but requires a considerable Force to separate its Parts, which fly off from one another, like those of Glass, with a sensible Noise. It becomes the Cause of Taste and Smell, because its Particles terminate in strong Points, which vellicate the nervous Membranes of the Tongue and Nose.

Salt is of three kinds, acid, acrid, or alkaline, and a third, compounded of the other two, called, in *Latin*, *Sal salsus*.

Acid Salt is a Congeries of inflexible solid Parts, of an oblong Figure, and pointed at both Ends. That its Particles are rigid and hard, appears from the Force, with which it divides and dissolves solid Bodies; and its Sharpness and Pungency are evident from the Effect it has on the Tongue, different from the Corrosion of acrid Salts. Acid Salt is easily dissolved by Water, and after this Solution its Particles are equally dispersed thro' that Fluid, and have the same Motion with it. Hence it appears, that the Particles of both Substances have nearly the same specific Gravity; and likewise that the Motion of the aqueous Parts is great enough to overcome the Cohesion of the Parts of Salt.

Concerning the Manner, in which the Particles of acid Salt are compounded of Fire, Water, and Earth; nothing can with Certainty be determined. It may be conjectured however, that several Particles of Water, being collected into one little Mass, are cemented together by some Particles of Fire and Earth, lodged in the Interstices left between them; and that all these, taken together, are disposed in an oval Form, or that of two Cones joined by their Bases. This Configuration, however, is not the same in all acid Salts; but the Differences may all be reduced to three; the nitrous acid, the muriatic, and the vitriolic.

The Word *Alcali* is derived from *Calī*, the Arabic Name of a Plant, from the Ashes of which a Salt is obtained, proper for making Glass: And thence it came to be used for all Salts, got from the Ashes of Plants, and afterwards for all Salts, and other Substances whatever, that ferment with Acids.

Acrid or alkaline Salt seems to be a Congeries of spherical Particles, with rough prickly Surfaces, because of their great Disposition to Motion, and their corrosive burning Taste, the Points of their Surfaces acting on the nervous Papillæ of the Tongue, like so many Files, whereas acid Salt is only pungent. But then, by these Points, a larger Surface is exposed to the Action of Fire, than could otherwise be; and thus the Particles of alkaline Salt are very volatile, or easily raised by a gentle Heat. The Origin of their Salt is probably from a certain Connection of acid Points, and terrestrial Particles, because, in many Operations of Chymistry, such Salts arise from the Mixture of acid Salts, and Earth; as we see particularly in the Preparation of fixed Nitre, and Fomentation of Urine. Nitre, being distilled, leaves a compound fixed Salt behind, of the same Nature with Sea-salt, out of which, by a nicer Distillation, an acid Liquor may be extracted, without any volatile Salt, or at least, but a very small Quantity; but if the same fixed Salt be previously fermented, and then distilled, it yields a large Quantity of volatile Salt, and very little fixed Salt, or Acid; because by Fermentation or Calcination the acid and terrestrial Particles are intimately mixed, the acid Spicula entering the Pores of the Earth, and so forming new Molecules, which are dense and close towards the Centre, and prickly on the Surface, by the acid Points sticking out. Such are the Particles of volatile Alkali, of which if a great Number be joined together, they must cohere very strongly, by means of their Points, and form Molecules of irregular Figures, in the Pores of which watry, earthy, sulphureous, or acid Particles may be received and absorbed. Hence it is that acid Salts are seldom pure; and as they are very often filled with Particles of Earth, they resist the most violent Degree of Fire, and will sooner melt than be raised by it. This is the true Nature of fixed alkaline Salt, such as Salt of Tartar, or the Salts got from the Ashes of Plants called Lixivial Salts. If they be impregnated with sulphureous Particles, they continue very volatile, and are raised by a small Degree of Fire; as we see in Salt of Urine, Hartshorn, and others got from Animals. Acrid Salts easily melt, when exposed to a moist Air, because the Particles of Water contained in it readily enter their Pores. When thus melted, they become properly Lixivia, and are commonly termed Oils, as Oil of Tartar per Deliquium. Volatile alkaline Salts, diluted with Water, are called volatile urinous Spirits; such as the volatile Spirit of Urine, of Hartshorn, Blood, and others.

The *Sal Salfus*, or third Kind, is compounded of acid and alkaline Molecules united together; and the Figure of its Particles is principally produced by the Kind of Acid that enters its Composition. The Impression these Particles make on the Tongue, is more dull and languid, than that made by acid or acrid Parts alone; because the Molecules formed by the Union of these are larger in Bulk, and consequently less disposed for Motion; and therefore, though there is a greater Quantity of Aculei, or Points, in one of these Molecules than in the former, yet their Bulk makes them less capable of entering the Pores of the Skin, and vellicating the nervous Papillæ, than when they are in a disjointed State. The Taste of these Salts is termed saline, and varies according to the Thickness of the Spicula, their Number, and the other Parts that may be mixed with them. That this is the true Original of this kind of Salts, is evident, both from the artificial Composition thereof, from acid and acrid Particles blended together, and from the Resolution of them into the same. Thus, by pouring Spirit of Nitre, of Sea-salt, or of Vitriol, on Salt of Tartar, new Salts are produced exactly of the same Appearance with Nitre, Sea-salt, or Vitriol; and, by analysing these three Salts, the essential Salts of Plants, Sal Ammoniac, and others, an acid and alkaline Salt may be obtained, in some fixed, in others volatile.

OIL, OR SULPHUR, CONSIDERED.

What the Chymists call Oil, or Sulphur, is not a simple Substance, but a Body compounded of Fire, Water, Earth, and Salt; but we chuse to introduce it here, as it is most commonly separated entire in the Operations of Chymistry, and is not resolved without Difficulty into its component Principles. It may be defined to be a fluid, viscid, inflammable, transparent Body, without Taste or Smell, (though, by mixing it differently

with Salts, these sensible Qualities are produced) compounded of Fire, Water, Earth, and Salt; and it may be conceived to consist of many Flakes, or Flocculi, each of which is again made up of very small flexible Filaments, formed of the four Principles before-mentioned, by Fermentation, as well in the Bowels of the Earth, as in the Bodies of Vegetables and Animals: Thus an aromatic Plant, growing in Water, will, by Distillation, yield an Oil, which could never have been obtained from the Water, in which it stood; and all Oils may by Art be resolved into Water, Earth, and Salt. From these Filaments variously concreted arise the Flakes already mentioned, which are of different Thicknesses; and in the Pores thereof is lodged the Element of Fire, which, also, runs in Rivulets through their Interstices. Upon these depend the specific Levity, Inflammability, and Fluidity of Oil; but, as, notwithstanding the intestine Motion caused by the Element of Fire, the small Flakes still adhere, in some measure, together, this Fluid must be more viscid than any other.

From what has been said concerning the Nature of alkaline Salts, and the Figure and Structure of the oily Flocculi, it is easy to conceive, why all Alkalies dissolve Sulphurs; for since the alkaline Particles are spherical and prickly, they cannot enter the Interstices of the Flakes, without carrying away some of them from the rest; and thus, by degrees, thoroughly dissolving them. But the dense, rigid, and pointed Molecules of Acids, being forced into these Interstices, increase the Density, and strengthen the Texture, of the Flocculi; and from the Diversity of these, and of the acid Spicula mixed with them, arise the different kinds of Sulphurs. Sulphurs formed in the Earth of Fire, acid Salt, Water, and a very fine Earth, are termed Bitumens. Thus Bitumens dissolved in a large Quantity of Water form the mineral Oils, or Petrolea. But if they are mixed with Earth and Salt, the solid Bitumens are produced, differing from one another in Degrees of Purity, according to the Quantity or Grossness of the Earth, or different Degrees of Mixture. Thus fossil Coals, Jet, Amber, and the common Bitumens, and bituminous Earths, are produced. If there be but a small Quantity of Earth, and much acid Salt, the common mineral Sulphur, or Brimstone, is formed. If the mineral original Bitumen is joined to a fusible Earth, capable of Vitrification, it communicates to it a metallic Form; that is, the Sound, Brightness, Softness, Ductility, Malleability, and all the other sensible Qualities of Metals.

This Origin of mineral Bitumens may be confirmed by many Experiments: If a Mixture of equal Parts of Oil of Vitriol, and Oil of Turpentine, be digested together, for a considerable time, in a very gentle Heat, and afterwards distilled in a Retort, there will come over first a yellowish Liquor, resembling Petroleum, both in Smell and Consistence. What remains in the Retort, is, at first, a soft Bitumen, and afterwards turns into an hard black Mass, easily inflammable, and, when burnt, smelling exactly like a fossil Coal. But if the Distillation be continued, a white acid Liquor will next be obtained, which, by standing, lets fall a grey Powder, which is true common Brimstone, a yellow Substance of the like Nature adhering likewise to the Neck of the Retort; what is left behind being a black, shining, light Substance, disposed in thin disgregated Strata, like Talc, in which, by the Help of the Loadstone, Iron may be discovered. Thus, therefore, all these Bitumens may be artificially produced; and the Analysis of the natural ones further confirm the Manner of their Formation. Thus the Chymists have shewn, that Metals are nothing but bituminous Substances, which have undergone a long Digestion; for, by depriving them of their Sulphur, they are reduced to Ashes, and then to Glass. This is easily seen in the imperfect Metals; for if any of them be exposed to a long Heat, and especially to the Rays of the Sun, collected by a large Burning-glass, the sulphureous Principle flies off, and only a Calx, or Ashes, will be left behind, which, in a more vehement Degree of Fire, are presently vitrified; and, by restoring the Sulphur, this Glass may be again reduced to Metal.

The inflammable Substances in Animals and Vegetables consist of a different Combination of the Principle of Sulphur, and acid Salt; for the Oil, or Sulphur, in these, is formed by a small Portion of Earth joined to the elementary Fire, acid Salt, and Water: This Oil, when joined to an acrid Salt, produces Gums; when joined to a fine Acid, and a new Accellion of fiery Particles, it produces essential Oils, and inflammable Spirits; but if the Acids are more gross, by reason of a larger Quantity of Earth joined to them, it forms Resins, as we learn from the artificial Composition of all these Substances. By mixing Spirit of Wine with volatile Spirit of Urine, we obtain a mucilaginous Concretion, or thin Gum. Oil of Olives, and Salt of Tartar, melted together, makes a kind of Soap, or thick Gum; and if Spirit of Wine be digested for a long time with Oil of Vitriol, and then distilled, an inflammable Oil is obtained, resembling in Smell, and other Qualities, the essential Oils of Plants, a true Resin being left behind in the Retort.

In Animals this same oleaginous Principle forms the Fat, and other glutinous or gelatinous Substances; these last being

P R I

composed of an acrid volatile Salt and Oil, as appears from their Analysis: But Fat is made of the same Oil, and acid Salt; for if Oil of Olives, and Spirit of Nitre, be mixed together, and digested, a Substance will be formed in every thing resembling the Fat of Animals.

Sulphureous Substances found in Bodies are either fixed, or volatile. The fixed Sulphurs are either solid, such as Fat, Resin, and the Bitumens; or fluid, as Oils. Volatile Sulphurs are such as fly off with a small Degree of Fire, and have an Appearance compounded of that of Oil and Water. Such are inflammable Spirits obtained from the Flowers and Fruits of Plants.

THE MIXTURE OF ELEMENTS.

All Bodies consist of the five Principles above-mentioned; and the Diversity of Bodies arises entirely from the different Combination of them. These Combinations, or Mixtures, of the five Principles are produced by Motion, and that Motion entirely by the Element of Fire. This Motion is sometimes slow and insensible, as in the Growth and Maturation of Fruits; more lively and quick, as in the Fermentation of Must; or very vehement, as in the Deflagration of Bodies. All these Motions go by the general Name of Fermentation; and if they tend to the Destruction or Dissolution of Bodies, they are termed Corruption.

The most simple, or least compounded, Mixture of Principles is seen in the Fermentation of Salts, which consist principally of Water and Earth; next of Sulphur, made up of Water, Earth, and Salt; then of the acrid Salts, both fixed and volatile, with the essential Salts of Plants, and sulphureous Bodies, whether solid or liquid. The Manner how these Mixtures are brought about, and the Changes arising from thence, will best be understood by Examples.

The Fruit of the Vine, just beginning to put on the Form of Grapes, is insipid, or, at least, tastes only like Grass. As it grows, a certain Acidity is discovered in it, which at first produces an austere Taste; then an acerb one, in which State the Juice is termed Omphacium, which, in Distillation, yields a great Quantity of Water, some acid Liquor, and a small Portion of Oil, a large Proportion of Earth being left behind. In this Juice, therefore, the austere and acerb Tastes are owing to the acid Spicula, just breaking out through the earthy Parts, but not wholly disengaged from them. When the Grapes come to be fully ripe, the austere Taste is changed to a sweet one, because the Juice, being more thoroughly penetrated by the Element of Fire, is rarefied, and put in a more violent Motion, by which the Salts throw off their earthy Involucra entirely, and by a new Combination of these Salts, Water, and Earth, are formed Sulphurs, or Oils. But if any of the acid Salts remain after the Composition of the Sulphurs, they continue still entangled by the Filaments thereof; and their sharp Points, velleitating the nervous Papillæ of the Tongue, create that agreeable Taste, which is perceived in Must. This Must in Distillation affords a great Quantity of Phlegm, next a pretty large Portion of an acid Water, some acrid or volatile urinous Salt, and a Quantity of thick Oil, much beyond what was gained by the former Distillation. Lastly, from the Mass that remains in the Retort, an acrid fixed Salt may be obtained by the common Method. However, even in this Juice of ripe Grapes, or Must, the Salts and Oils are not carried to the greatest Degree of Fineness, and Part of them remain still involved in the earthy Involucra. But if a large Quantity of it be set to ferment, the igneous Particles begin to act again, and by them this intestine Commotion is continued, till all the gross Parts are either attenuated, or thrown out from the Liquor, and the Salts and Sulphurs perfectly set free from the earthy Parts, and intimately mixed with one another. The Liquor in this State is Wine, and the gross Parts, that fall to the Bottom of the Vessel, are termed Lees. The Briskness and penetrating Quality of the Wine seems to be owing to the large Proportion of the Element of Fire, which harbours among the Filaments of the sulphureous Flocculi; and this Liquor being distilled, we obtain, first, a great Quantity of inflammable Spirit, then a copious Phlegm, next an acid Liquor with some Portion of an oily Spirit, a thick Oil, and, lastly, a small Quantity of Caput Mortuum, which will yield a little fixed Salt. In this Distillation a far less Quantity of acid Liquor is obtained, than from Must, which, on the other hand, yields no inflammable Spirit. If the Lees of Wine be well dried, and then distilled, they yield a very large Quantity of volatile urinous Salt, the acid Salts, combined with the sulphureous and earthy Particles, being, by Fermentation and Heat, converted into alkaline Salts.

In the same manner, if green Peas or Beans be distilled, they yield a great deal of acid Liquor and Phlegm, with a small Proportion of Oil. If they are first fermented with common Water, an inflammable Spirit is got from them in the same manner as from Wine; and if they are kept for some Months in a dry Place, they yield a volatile alkaline Spirit, without any acid Liquor, or, at least, but very little. Whence it is evident, that acid Salt, by its Union with other Principles, is changed into Sulphur; and, by its Union with earthy and sulphureous Parti-

P R I

cles, becomes an alkaline volatile Salt; as, by being driven into earthy Particles, alone, by the Force of Fire in Calcination, it is changed into a fixed Alkali.

It may be proper, upon this Occasion, to observe, that the Salts of all Plants are not entirely alike, but differ from one another, not only as the Quantity of Sulphur, Water, or Earth, which is joined to the Acid, is greater or less; but, also, according to the original Nature of the Acid which enters their Composition. Acid Salts, as we have already said, are of three Kinds, muriatic, nitrous, and vitriolic. Muriatic Salts, such as Sea-salts, and Sal Gemmæ, being crystallized, put on a cubic Figure, the Particles thereof appearing to be formed of two quadrilateral Pyramids, joined together by their Bases. Nitrous Crystals represent Prisms with six Sides, formed by the Juxtapositions of two triangular Pyramids; and Crystals of Vitriol seem to consist of two hexagonal Pyramids, as far as can be judged by the Particles thereof, when carefully separated from all Metals. These original Salts, combined with others, form compound Salts, of almost all Kinds. Thus, in the Vegetable Kingdom, the different Sorts of Vinegars are nothing but some original acid Salt dissolved in Phlegm. The essential Salts of Plants obtained without Fire consist of some Acid joined with Particles of Earth, or of the other Principles. Sal Ammoniac arises from the Union of acid and volatile alkaline Salts. Fixed Alkalies are only the acid Spicula struck into earthy Molecules; and volatile Alkalies consist of the same Acid, joined to very fine Particles of Earth and Sulphur, so as to form prickly Globules. Moreover, the same Varieties of acid Salts are to be met with in Vegetables, that are found in Minerals. Thus the essential Salts of Pellitory of the Wall, Borage, wild Cucumber, and the like, are nitrous; and, when thrown upon burning Charcoal, they fulminate like Nitre. The fixed Salts of Carduus Benedictus, Glasswort, and Spurge, are like Sea-salt, their Particles having the same cubic Figure; and, when thrown upon burning Charcoal, they decrepitate. The Crystals of Tartar are like those of Vitriol; and that they are formed by a vitriolic Acid, appears from the sulphureous Smell of Tartar, when artfully calcined. Besides the saline Compounds already mentioned, other Mixtures are formed in Plants, such as Gums, Resins, Honey, and the like. Gums are something between Acid and Oil, being an acid Salt, so fixed in the Earth, as that the greatest Part of it is changed to an Alkali, the other into Oil; so that the Mixture arising from thence is an oily Salt, resembling the saponaceous Concretes of the Chymists, made of Oil of Olives, and a Lixivium of Tartar, or the mucilaginous Bodies formed of Spirit of Wine, and the volatile Spirit of Urine. And thus we see, that all Seeds which are oily when ripe, are in the Beginning only a Mucilage, or imperfect Oil. Resins consist of Oil and Acid, and accordingly are artificially produced by mixing Spirit of Vitriol with Spirit of Wine, or of Turpentine. They are either solid, or liquid; but these differ from one another only in the Proportion of Earth, that enters their Composition. Melleous Juices, which either exude spontaneously from Plants, such as Manna, or are obtained by Art, as Sugar, are essential Salts, consisting of a Mixture of Acid and Alkali, with a large Proportion of Oil.

The Mineral Kingdom furnishes us with a great Variety of Instances, of the way how the Principles of Bodies may be combined together. The Lime-stone and Parget are so framed, that, by being calcined, a vast Number of Cells are opened by the Fire, into which Water easily enters, with an Hisling or Collision of the included igneous Particles. If the Water remain long in these little Receptacles, nitrous Parts are formed, as we see in old Walls, built with these Materials, from which Nitre may always be obtained. The greatest Part of this Nitre, by Distillation, is changed into an acid Spirit; but, by Calcination, turns to an alkaline Salt. And it may be, that the Nitre of the Antients, or that alkaline mineral Salt, which was dug out of the Earth in Egypt, and other Countries, and is obtainable by Art from mineral Waters, was nothing but Nitre calcined by the Heat of the Earth, and so converted into a fixed alkaline Salt. The vitriolic Acid, joined with different metallic Substances, produces all the Kinds of Vitriol; with an atringent Earth, it forms Alums; and with the Principle of Fire, common Brimstone, which, by Deflagration, may be again converted into Oil of Vitriol, the other Principles flying off. Brimstone may, likewise, be artificially produced by uniting the Principle of Fire to any vitriolic Acid.

The like Mixture of the Principles of Bodies may be observed in the Animal Kingdom. Chyle and Milk contain a latent Acid; which easily discovers itself by Putrefaction; but this acid Salt, having undergone a due Fermentation, or some other Action analogous to that in the animal Body, is changed into a volatile Alkali, obtainable in great Plenty from the Blood, Serum, Bile, Urine, and other Juices. In an healthy Body, however, these volatile Alkalies are never perfectly formed, the animal Salts being more of the Nature of Sal Ammoniac, with a Mixture of earthy and oily Parts, to which Mixture the glutinous Quality of the Blood and Serum is owing. By Putrefaction, or Calcination, all animal Liquors are changed, so as to afford

P R O.

afford perfect volatile Alkalies, as has been evidently shewn by Experiment. *Geoffroy*.

PRION, *πρίων*. A Saw, or *Terebra*.

PRISIS, *πρίσις*, from *πρίω*, to saw. A Saw, or *Terebra* of the Trepan. A Sawing. Or a Grinding of the Teeth.

PRISMATA, *πρίσματα*, from *πρίω*, to saw. Saw-dust, or Rasps.

PROBARBIUM. The first Appearance of the Beard on the superior Lip.

PROBLEMA, *πρόβλημα*, from *προβάλλω*, signifying, among other Actions, to object, or lay some Hindrance in the Way, is any kind of Obstacle laid to obstruct an Entrance into any Place, or guard the Avenues leading to it. In this Sense the Term *πρόβλημα* is used by *Hippocrates*, *Lib. πρὸ γυναικ. φύσ.* and *Lib. 2. πρὸ γυναικ.* to signify the Membrane which, growing to the Neck and Orifice of the Uterus, obstructs the Passage of the Semen, and so prevents Conception. This Membrane, he says, will offer itself to the Touch of the introduced Finger.

PROBOLE, *προβολή*, from *προβάλλω*, to project, is a Projection, or Prominence, of any kind. Thus, *Lib. de Artic.* *Hippocrates* observes, that, in other Cattle besides Oxen, *προβολὴ τῆς χείλεος λεπτή*, "The Prominence of the Lip is but thin," and the upper Jaw is but thin, and therefore they can feed upon short Grass; but in Oxen it is quite otherwise. And, *Lib. de Vulneribus Cap.* *προβολὴ τῆς κεφαλῆς ἐκ τῆς ἐμπροσθεν*, "The Prominence of the Head towards the anterior Parts," is explain'd by the Author to be when the round Eminence [*ἐξέχον σφαιρόν*] of the Bone juts out beyond the rest.

PROBOSCIS. The Trunk of an Elephant, and of some Insects.

PROCARDION, *προκαρδιον*. The Pit of the Stomach.

PROCATARCTICA CAUSA. The antecedent, pre-existent, or predisposing Cause of a Disease. See CAUSA.

PROCESSUS, in Anatomy, is a Process, Protuberance, or Eminence of a Bone. In Chymistry, a Process is properly a Series of Operations, tending to the Production of something new.

PROCHEILA, *πρόχειλα*. The Extremities of the Lips.

PROCHYMA, *πρόχυμα*. Must which flows from the Grapes spontaneously, before they are pressed.

PROCIDENTIA. The falling of any Part out of its proper Place. It is the same as PROLAPSUS.

PROCLISIS, *προκλίσις*, from *προκαλίω*, to provoke, call forth, signifies, in *Hippocrates*, a provoking or inviting the Senses to the external Parts, in order for their Gratification. Thus we read, *Lib. de Liquid. Usu*, *διὰ τῆς καὶ ἀπὸ τῆς θερμῆς ἡδονῆς καὶ προκλίσεις, ἀπὸ δὲ τῆς ψυχρῆς ἀλγυνδόνες καὶ ἀποθρίψεις*. "For this Reason, hot Water gives Pleasures and Allurements to the Senses; but cold Water, on the contrary, creates Uneasiness and Aversions." Here *ἀποθρίψεις*, which import a Retreat, Shrinking back, and Retirement, as it were, of the Senses inwards, is set in Opposition to *προκλίσεις* in the Sense before given. The Word occurs, also, *Lib. πρὸ εὐχρη.* in the following Passage; *νομίζω γὰρ τὸ τοιοῦτον εἶναι ἐς προκλίσειν θεωρητικῆς*. "For he thinks this necessary towards the inviting or procuring Health." But it is here to be observed, that the printed Copies read *πρόκλησις*, which cannot much alter the Sense.

PROCONDYLOS. The first Joint of every Finger.

PROCONIA ALPHITA, *προκόνια ἀλφίτα*, *Lib. 2. πρὸ γυναικ.* as explained in *Galen's Exegesis*, signifies Meal of Barley prepared while the Grain is new and tender; and the Reason why it was so called, was, because it was prepared *πρὸ τῆς τῆς κωνῆς ἐκδοσεως*, "Before the Erection of the Cone," or before the Barley was erected into Piles of a conic Figure. For *κωνος*, according to *Galen*, is a wooden Structure erected in Arcas, and especially in humid Places, about which the Corn and Fruits were piled up in a tapering Figure, or in the Form of a Cone. Some, however, as *Galen* says, in *Exeges.* by *προκόνια ἀλφίτα* understand *τὰ τῶν ἀφρύκτων μόνον*, "Nothing but Meal made of Barley not torrefied."

PROCTOS, *πρωκτός*. The Anus.

PRODROMUS, *πρόδρομος*, from *πρὸ*, before, and *τρέχω*, to run. It imports the same as PROCHYMA. Certain Winds which blow before the Dog-days, are called *Prodromi*. See ETESIA. *Prodromus* is, also, any Circumstance which precedes a Distemper, and indicates its Approach.

PROEGUMENE. See CAUSA.

PROFLUVIUM. A Flux of any kind.

PROFUNDUS MUSCULUS. A Name of the Muscle otherwise called PERFORANS MANUS.

PROGERMINUS ABSCESSUS. An Abscess arising from a viscid, and almost corrupted Phlegm. *Castellus* from *Marc. Aurel. Severinus*.

PROGLOSSIS, *πρόγλωσσις*. The Tip of the Tongue.

PROGNOSIS, *πρόγνωσις*, from *πρὸ*, before, and *γινώσκω*, to know. The Prognostic of a Distemper. See FIGURA.

P R O

PROHIBENS. The same as CONTRAINDICANS. See ANTEDEIXIS.

PROJECTIO. Projection. A chymical Term, importing the casting of any Substance, to be calcined, into a Crucible, by a Spoonful, or a small Quantity, at a time. Projection is, also, an Addition of a small Quantity of something to a greater Quantity of a Metal, in order to meliorate the Metal. *Wilson's Chymistry*.

PROJECTURA. An Apophysis. *Blancard*.

PROLABIA. The same as PROCHEILA.

PROLAPSUS ANI. See ANUS.

PROLAPSUS UTERI. See UTERUS.

PROLECTATIO, is defined, an Extraction, by the Extension of the most subtle Parts, in such a manner, that these, being rarefied, separate spontaneously from the more gross Parts. *Rulandus*.

PROLEPTICOS, *προλεπτικός*. Anticipating; an Epithet of the Fever, the Paroxysms of which return sooner than they ought to do regularly.

PROMALACTERION, *πρωμαλακτήριον*. The first Apartment in the antient Baths, where the Body was softened, before going into the Bath.

PROMANUS. The Thumb.

PROMETOPIS, *πρωμετωπίς*. The Skin of the Forehead.

PRONATOIRES. The Name of two Muscles of the fore Arm. One is the

PRONATOR TERES, SIVE OBLIQUUS.

This is a small Muscle, broader than it is thick, situated on the upper Part of the Ulna, opposite to the Supinator Brevis, with which it forms an Angle like the Letter V.

It is fixed to the internal Condyle of the Os Humeri, partly by fleshy Fibres, and partly by a Tendon common to it with the Ulnaris Internus; thence it passes obliquely before the Extremity of the Tendon of the Brachialis, and reaches to the middle Part of the convex Side of the Radius, where it becomes flat, and is inserted below the Supinator Brevis by an Extremity almost wholly fleshy.

It is called the Teres, to distinguish it from the Quadratus. The Name of Pronator Superior would be more proper, but that of Pronator Obliquus is the most proper of all.

This Muscle can have no other Action but that of Pronation, in the different Situations of the Radius, whether that Bone be in a middle State between Pronation and Supination, or in the greatest Degree of Supination: And, in this Case, though it is but a small weak Muscle, it overcomes the Supinator Longus.

PRONATOR QUADRATUS SIVE TRANSVERSUS.

This is a small, fleshy Muscle, nearly as broad as it is long, lying transversely on the Inside of the lower Extremity of the fore Arm.

It is fixed by one Side, or Edge, in the long Eminence, at the lower Part of the internal Angle of the Ulna; and, by the other, in the broad, concave Side of the lower Extremity of the Radius.

It is wholly fleshy, without any Mixture of tendinous Fibres. It is situated transversely, but that Extremity which lies on the Radius, is nearer the Carpus, than that on the Ulna. It is of a moderate Thickness, and the Fibres nearest the Surface are the longest, the rest decreasing in proportion as they lie near the Interval between the two Bones, and the interosseous Ligament.

It has a ligamentary, or tendinous Frænum, belonging to it, one End of which is fixed in the interosseous Ligament, the other in the inner Edge of the Basis of the Radius.

The Pronator Quadratus is capable of no other Motion but Pronation, and it acts with much more Force than its Congener, the Pronator Teres; both because of the Number and Direction of its Fibres; and because it acts upon the Radius near the lower Extremity, where its Effects, in Pronation, are, much greater, than if it acted near the Head of that Bone. The Fibres lie almost in the same Direction in which the Bone moves; and in this it has the Advantage, not only over the other Pronator, but over all the Supinators, the Biceps itself not excepted.

The Fibres, of which this Muscle is composed, are so disposed, as that the longest adhere to the internal Angles of both Bones of the fore Arm; the shortest lie nearest the interosseous Ligament; and the intermediate Fibres are longer or shorter, according to their greater or less Distance from the Ligament.

By these different Degrees of Length, the whole Number of Fibres is advantageously disposed, and their Action rendered uniform. In the greatest Degree of Supination, the Extremity of these Fibres, inserted in the two Bones, make a very oblique Plane, which becomes almost straight, in the greatest Degree of Pronation. *Winslow's Anatomy*.

PRONERVATIO. A Tendon, or tendinous Expansion. *Castellus*.

PRO-

PRONOMÆA, προνομαία. The same as PROBOSCIS.

PROPHASIS, πρόφασις. The Cause, or Occasion, of a Disorder.

PROPHYLACE, προφυλακή; PROPHYLAXIS, προφύλαξις; and PROPHYLACTICE, προφυλακτική, from προ, before, and φυλάω, to preserve. The Method of preserving Health, and averting Diseases. See INDICATIO.

PROPOLIS. Bee-bread. This is a rude, wax-like, and thick Matter, or Glew, found in the Entrance of Bee-hives. It is gently heating, abstergent, and attracting: It softens indurated Parts, alleviates Pains, and induces Cicatrices on Ulcers. Schrod. See AMBRA.

PROPOMA, πρόπομα, or προποτισμός. A Potion prepared of one Sextary of despumated Honey, and four of Wine, boiled together. Paulus Ægineta, Lib. 7. Cap. 15.

PROPTOSIS, πρόπτωσις. The same as PROLAPSUS; a falling out of the natural Situation; from προπίπτω, to fall out.

PRORA. The Occiput. Os Proræ is the Os Occipitis. Sutura Proræ is the Lambdoidal Suture.

PRORRHESIS, προρρησις, from προ, before, and ρέω, to tell. A Prediction, or Prognostic.

PROSARMA, προσάρμα, from προσάιζω, to offer. Aliment.

PROSARTHROSIS, προσάρθρωσις. The same as ADARTICULATIO.

PROSCARABÆUS. Offic. Mouff. Insect. 162. Jonf. de Insect. 74. Mer. Pin. 201. Scarabæus unctuosus. Schrod. 5. 345. Pinguiculum. Agric. Meloch. Paracels. THE OIL-BEETLE.

It is to be found creeping about every-where by the Sides of Paths, and in Woods, in the Months of May and June; and the Parts used in Medicine are the Insect itself, and its oily yellowish Liquor.

The Oil-beetle is much of the Nature of Cantharides, forces Urine and Blood, and is of extraordinary Efficacy against the Bite of a mad Dog. Taken in Powder, or preserved, it cures the Vari, or wandering Gout, as we are assured by Wierus. The Liquor is, by some, esteemed of Efficacy in Wounds; it is an Ingredient, also, in Plaisters for the Pestilential Bubo and Carbuncle, and in Antidotes; an Oil is prepared by Infusion of the living Animals in common Oil, which some use instead of Oil of Scorpions. Dale from Schroder.

PROSCEPHALÆON, προσκεφάλαιον, from προ, to, and κεφαλή, the Head. A Pillow, to support the Head, or a disordered Limb.

PROSCLYSMA, πρόσκλυσμα. An Asperision, or Sprinkling, of any Part with a Fluid.

PROSCOLLEMA, προσκόλλημα. An Agglutination.

PROSCRIPTIO. A Retardation. Rulandus.

PROSECHES, προσεχής. The same as SYNECHES, or CONTINENS.

PROSERPINACA. A Name for the Polygonum Latifolium.

PROSERPINALIS HERBA. A Name, in Marcellus Empiricus, C. 10. for the Dracontium.

PROSOEMA, πρόσοιμα. The same as PROSARMA.

PROSOPITES, προσωπίτης. The same as ARCION. The Burdock. Paulus Ægineta, L. 7. C. 3.

PROSPHEROMENA, προσφερόμενα, (from προσφέρω, to bring, or offer; properly, in a medicinal Sense, Food, or Aliment. are usually spoken of such Things as are offered to the Sick for their Support and Nourishment; but, however, often signify the external Apparatus necessary to the due Treatment of a diseased Part; or, in short, whatever a Surgeon ought to be provided with when he undertakes a Cure. Hippocrates, Lib. de Medico. Προσφερόμενα, in the more usual Sense, as signifying Food offered, are also called προσοίσματα (Prosoismata), and προσοίσεια (Prosoisseia); as in that Passage, Lib. de Locis in Homine, καὶ ὅταν κελεύεται τὸ σῶμα ὑπὸ τῶν προσοισμάτων. "Whenever the Body is overcome by (is too weak to concoct) the Foods exhibited;" πρόσοισμα, a few Lines farther, is also spoken in the other Sense of a hot Bath; and Lib. de R. V. I. A. near the Beginning, παροιεία comprehends all manner of Assurances offered to the Sick, whether of Food, or Medicine. Again, Epid. 3. Sect. 3. we read, τοῖσι δὲ προσφερομένοισι δυσκόλως ὑπακούοντα. "They [the Bodies of the Patients] were not easy to be affected, or wrought upon, by the Things which were exhibited;" where Galen, on the Place, says, that by προσφερόμενα we are to understand all manner of Helps, and Assurances, in general; and, particularly, Meats and Drinks. In 2 Aph. 33. προσφοραὶ are expounded, by Galen, τῶν σιτίων προσφοραί, "Exhibitions of Food."

PROSTASIS, πρόστασις, from προϊσταιναι, to preside in Power or Dignity, is used, by Hippocrates, in a particular Sense, for that Humour, which prevails and predominates over the rest. Thus, we read, 6 Epid. Sect. 5. Aph. 15. γλῶσση ὁμόχρως τῇσι προστάσει, "The Tongue is of the Colour of the prevailing Humour." Galen here confesses it to be an ob-

scure Word, but understands it of the Humour with which the Tongue appears, chiefly, impregnated. Prostasis, Lib. de Locis in Homine. as derived from προϊσταιναι, to stand by, to adhere; signifies no more than an Adhesion, or Accrescence, in that Expression, αἱ τομαὶ σικναὶ εὐδαι πρόστασις ποίευσιν τῇ σαρκὶ πρὸς τὸ ὄστέον, "Often-repeated Sections cause Flesh to come, or grow up, about the Bone."

PROSTATÆ. The Prostata Glands; from προϊσταιναι, to be adjacent to. See GENERATIO.

PROSTETHIS, προσθηδὶς. The anterior Part of the Thorax; or the fleshy Parts in the Concavities of the Hands, and Feet, and betwixt the Fingers.

PROSTHESIS, πρόσθεσις, from προσθίηναι, to add. That Part of Surgery which supplies what is deficient.

PROSTHETA, πρόσθετα, from προσθίηναι, to apply, signify, in Hippocrates, subditiuous Medicines, whether Suppositories, or Pessaries. Prostheton, προσθῆτον, frequently signifies a Suppository; and πρόσθε, or προσθίηναι ἐν ἰρίῳ, is often spoken of a Pessary, applied in Wool, throughout the whole Treatise de Morb. Mul. Sometimes, instead of προσθῆτον, we read πρόσθεμα, in the same Sense; and once, Lib. 1. περὶ γυναικ. we meet with πρόσθεισιαι, for πρόσθῆτα; tho' πρόσθεισιαι, in other Places, signify Exhibitions of Food; and προσθίηναι is often used with relation to the same.

PROSTHEMENE, προσθήμενη, in Hippocrates, is a Woman under the Application of a Pessary. Thus, 1 Epid. Ægr. 4. προσθήμενη δὲ ταῦτα μὲν ἐκέρχθη, "Being treated with a Pessary, these (Symptoms) were alleviated." Galen, on this Place, says, "The Signification of this Word, προσθήμενη, when it is joined with βάλανθρον (Balanus), a Glans, or Suppository, is obvious; but when it is used without an Addition, we are either to understand it of βάλανθρον, as some will have it; or of a lenitive and antiphlogistic Pessary."

PROSTHION, πρόσθιον. The Penis.

PROSTOMION, πρόσθμιον. The Part where the Lips meet, when closed.

PROTARCHI MEDICAMENTUM. The Name of a Medicine, recommended by Celsus, against the Scabies, L. 5. C. 28. Sect. 16.

PROTASIS, πρότασις, from προτίειναι, to stretch, or put forth, or propose, is, properly, a Proposition, or Problem, offered to be discussed; but πρόστασις πνευμάτων, Lib. de R. V. I. A. "Stretchings of the Spirits (Breath)," are expounded, by Galen, on the Place, by Obstacles and Interruptions of Respiration. For τὰ προτεταμένα πνεύματα, "Breath drawn out in Length," he says, are τὰ διονέγκοντα, "such as is, in a manner, interrupted;" and which, in another Place of the same Book, is described as πνεῦμα προσπίπτον ἐν τῇ ἀνω φρενί, "Breath which strikes, or impinges, in its Passage upwards." It is to be observed, that all the vulgate Copies of Hippocrates read πρόστασις (Prostasies); but those of Galen have it, πρόστασις, (Protasies) as above.

PROTEUS. The Name of a Collyrium, described by Paulus Ægineta, L. 7. C. 16.

Proteus was represented, by the antient Poets, as a God, the Son of Oceanus and Thetis, who could transform himself into any Shape. Hence Morton, in his Pyretologia, calls the irregular Appearances of intermitting and remitting Fevers, Proteiform. And certain it is, that, in consequence of the Violence of the Symptoms, when almost the whole System is briskly stimulated to a Conflict with the peccant Matter, these Fevers often resemble most other Diseases, especially of the acute Kind, but yield to the Efficacy of the Bark; tho', at the same time, they often prove fatal, if that Medicine is not exhibited: For, among the various Symptoms which generally accompany these Fevers, there is not one, which does not, sometimes, rage with such Violence, as not only to endanger the Life of the Patient, but, also, so totally to conceal and oppress the Form of the Fever, in its various Stages, of Chills, Heat, and Sweat, that it can neither be distinguished by the Urine, the Temperament, the Pulse, or any other usual Method; but, appearing under the Mask, as it were, of a terrible Chills, an incessant Vomiting, a Diarrhoea accompanied with Gripes, a Cholera Morbus, a Colic of the Stomach, a periodic Hemicrania, an Apoplexy, a Syncope, a Rheumatism, universal Spasms, a Pleurisy, a Peripneumony, a punctory Pain of the Side, or some other Disorder, frequently misleads the Physician from the true Intention of Cure. In this Case, an Attempt may, indeed, be made, to remove the Symptoms, by proper Medicines, but all in vain; for, as the febrile Ferment is neglected, on the Approach of the next Paroxysm, the former, or worse Symptoms, unexpectedly recur, the Physician labours in vain, and the Patient falls a Victim, or, at least, sustains a considerable Injury, by the Ignorance or Carelessness of his Physician.

When, in consequence of the highly deleterious Quality of the Poison, the animal Spirits are so weakened, that they can by no means expand themselves, after the first Shock, the Shivering, which,

which, generally precedes the first Approach of these Paroxysms, is so long protracted, that the Patient, spent with frequently recurring Deliquiums, at last falls a Sacrifice to his Disorder. Internal and external Medicines, are, in the mean time, used in vain, to rouse the languid Principle of Life; but the Fever cannot, even by the most accurate Observer, be discovered, from any Signs, either in the Urine, the Heat, or the Pulse.

In like manner, when, in the first Stage of the Paroxysm, the poisonous Fomes only oppresses the Spirits, so that they cannot expand themselves beyond their usual Sphere, the Patient without any Signs of a present Fever, complains of a Nausea, Sicknefs, and Vomiting, till the Poison being subdued by the *Peruvian Bark*, or some other Antidote, the Spirits are restored to their natural State.

Sometimes, about the Beginning of the Paroxysm, the febrile Poison is convey'd to the Glands of the Intestines, and excites a Flux, accompanied with Gripes, or a Dysentery. But when the Spirits are long oppressed in an uniform manner, these Symptoms, though continual, are at stated Periods augmented, become periodical, without any manifest Signs of a Fever, and cannot be removed by the Efficacy of Opium and Astringents, till, by a Mixture of the *Peruvian Bark* with Laudanum, the Cause, or febrile Ferment, which contaminates the whole Mass of Blood, is removed, together with all the Symptoms arising from it.

When the Poison partakes of an emetic, and at the same time, a cathartic Quality, the Patient is seized with frequent Vomiting and Purgings; and, unless the Spirits, by their due Expansion, throw off the Virulence of the Poison in the first Stage of the Paroxysm, a Cholera Morbus is by that means formed, whilst the Fever, in the mean time, can neither be discovered by the Pulse, the Urine, nor the Heat. The Stomach, in the mean time, or the Intestines, or both together, being spheclated by the intensely poisonous Acrimony of the Humours, the Patient soon dies; or, at least, after a delusive and fallacious Respite, when the next Paroxysm approaches, the same violent Symptoms are again produced by the Poison, unless such a Misfortune is prevented by a seasonable Exhibition of the Bark.

By the like Degree of Virulence in this Poison, I have frequently observed Patients, especially such as laboured under long and confirmed Fevers of this Kind, after the Form of the legitimate Fever was lost, so spent with a perpetual Nausea, Sicknefs, Vomiting, colliquative Sweats, hysteric Suffocations, and other like Symptoms, affecting the nervous System, that they seemed just about to die; and these, though incurable by any other means, I have speedily recovered by a due Dose of the Bark.

Every one conversant in the Practice of Physic knows, that violent spasmodic and lancinating Pains, equal to those excited by Poison, frequently accompany the first Attacks of legitimate intermittent Fevers, especially those of the quartan Kind, during the Shivering and Rigor, till the Spirits, being forcibly expanded and agitated, become capable of eliminating the acting Poison. The febrile Flame being by this means roused in the Mass of Blood, the painful Spasms gradually cease. But, when the Spirits are not only depressed by the Force of the Poison, but, also, forced into a kind of explosive State, I have, in consequence of this, found the whole Body not only for a long time continually cold, and without any Mark of a Fever, but, also, vellicated and twitched by universal violent and sitting Spasms. Nor is it to be wondered at, if, as it often happens, the Patient spent with perpetual Sicknefs, Vomiting, and Deliquiums, soon becomes desirous of Death, unless languishing Nature is seasonably assisted by Art.

The Spirits, also, in consequence of their natural Weakness, an Obstruction, and especially Cold, or any other evident Cause, are frequently forced into a kind of explosive State; by which means, some particular Parts, especially those of the Thorax, such as the Pleura, the Diaphragm, or the Stomach and Intestines, are vellicated and afflicted with spasmodic Pains. The Patient, in consequence of the intense Pain, shivers perpetually, and is spent with frequent Deliquiums, Suffocations, and Vomiting, without any ardent Mark of a Fever; he discharges clear Urine, and without any Pulse he is at the Point of Death, till the Spirits, affected by the Poison, being expanded either by Nature or Art, again rouse the Principle of Life in the Body. This Disorder can only be distinguished from a Cholera Morbus, a Pleurisy, or a Peripneumony, by the want of a Cough, and the Privation of the Pulse, by the excessive Vomiting and Pain, by the Deliquiums, and the Coldness of the Extremities.

I have, also, frequently known Patients complain of a punctory Pain in one or other of their Sides: But, in these, I could not for several Days discover any of the Marks of a Fever, except that the Pulse was somewhat too quick. But after by Venesection, and the Use of Laudanum mixed with Alexipharmics, these Spasms were mitigated, and by that means the natural elastic Force of the Spirits increased, the Signs of a

febrile Flame in the Mass of Blood soon discovered themselves. The Urine was tinged and turbid, the Pulse became equally strong and quick; the whole Body was render'd hot, a violent Thirst seized the Patients, and Aphthæ covered their whole Tongues and Mouths. But directing my Intentions to the febrile Flame, and the Exacerbation of the periodically returning Pain, by a sufficient Quantity of *Peruvian Bark* mixed with Laudanum, and exhibited in the Intervals between the Paroxysms, I subdued the Poison, and totally freed the Patients from their Fever and Pain.

I have often with Surprise observed, that, after the subduing of the febrile Poison, in some measure brought about by the Expansion of the Spirits, when by a strong and quick Pulse, an intensely red and turbid Urine, the Heat of the Body, and other Signs, the Fever manifestly discovered itself, the Joints were affected with these spasmodic Pains, which returned at stated Periods, like a Rheumatism removed from Place to Place, and produced a Tumor and Heat in the Parts affected, by means of the Efforts of the Spirits endeavouring to expand themselves in these Parts: But I always happily removed these Pains by due Venesection, and a copious Use of the *Peruvian Bark*, exhibited between the Paroxysms.

Every Physician knows, that, on the first Approach of legitimate intermittent Fevers, the Brain is affected, not only from the Vertigo, and the Oppression and Disturbance of the Spirits by the active Poison, but, also, from the acute and violent Pains arising from the Effort of the Spirits endeavouring to expand themselves in the Membranes of the Brain. But sometimes the Spirits are at this Period of the Fever so oppressed and disturbed, that the Patient, like one under an Apoplexy, lies, during the whole Paroxysm, without any Signs of the Fever; and the same Symptoms often return with the succeeding Paroxysm. But, though we are to endeavour the Mitigation of these Symptoms by Venesection, Vesicatories, and the other Remedies appropriated to the Cure of Apoplexies, yet their Return cannot be prevented without the Use of the Bark.

I have, also, observed a periodic Hemisrania produced by an Effort of the Spirits to expand themselves in the Membranes of the Brain. But this Symptom I totally removed in two Days time by Venesection, and the Use of the Bark; though, for its Removal, I had, for some Weeks before, in vain used Venesection, Vesicatories, Emetics, Cathartics, Errhines, and Masticatories. *Morton. Pyretologia.*

The above-quoted Author gives a great Number of Cases, in Confirmation of this Doctrine, which are very much worthy of Perusal, because this Subject is of infinite Importance in the Art of Healing. See *Exercitatio 1. Cap. 9. and Exercitatio 2. Cap. 9.*

PROTOMESIS, *πρότμησης*. The Navel of a Child, when first cut. According to *Pollux*, it signifies the same as *Lumbus*, a Loin.

PROTOGALA. Beestings; the first Milk, after an Animal has brought forth Young.

PROTOPATHEIA. A primary, or idiopathic Affection.

PROTOPLASTUS. The first Man. *Paracelsus.*

PROTORRHYTOS. See *CARNELÆON*.

PROTOS POROS, *πρώτος πόρος*. The internal Mouth of the Uterus. *Ruffus Ephesus, de Appel. Corp. Human. Lib. 1. Cap. 31.*

PROTOSMA. The first Woman. *Paracelsus.*

PROTOSTACTON, *πρωτόστακτον*. A Lixivium from Ashes, with an Addition of Quick-lime.

PROTOTOMI, *πρωτότομοι*. The tender Stalks, or Asparagi, of Cabbages.

PROTROPON, *πρωτρόπον*. The same as *PROCHYMA*.

PROULIMATESIS, in *Foreffus*, is a Disorder of the Stomach, consisting in its Prominence, exciting an external Tumor. *Castellus.*

PROVOCATORII DIES are the same as the *Dies Intercalares*; that is, those which fall betwixt the Critical Days, and the *Dies Indices*. They are the third, fifth, ninth, thirteenth, and nineteenth.

PRUINA, in *Paracelsus*, is a sandy Sediment in the Urine. According to *Rulandus*, *Pruina* is the first Species of Tartar. *Pruina Chymica*, are Sublimates.

PRUNA. See *PRUNUS*.

PRUNELLA. *Offic. Ger. 577. Emac. 632. Raii Hist. 1. 551. Synop. 3. 238. Prunella vulgaris. Park. Theat. 526. Prunella flore minore vulgaris. J. B. 3. 428. Brunella major folio non dissecto. C. B. P. 260. Tourn. Inst. 182. Boerh. Ind. A. 169. SELF-HEAL.*

The Roots of Self-heal are slender, creeping, and fibrous; the lower Leaves grow on long Foot-stalks, beset with a few Hairs, as is the rest of the Plant; they are broadest in the Middle, and narrower at both Ends, less than Betony, and not at all indented about the Edges. The Stalks are square, about a Foot high, with two Leaves set opposite at a Joint, which are not many on a Stalk; the nearer they grow to the Top, the shorter

shorter are their Foot-stalks. The Flowers are set on the Top of the Branches in thick verticillated Spikes, of a purple Colour, having an hollow Galea, and a three-lip'd Labella, standing in brown flatish Calyces, six standing round the Stalk in a Whorle; each Flower is succeeded by four longish brown Seeds growing in the Bottom of the Calyx. It grows everywhere in Meadows and Pasture-grounds, flowering all the latter Part of the Summer: The Leaves and Flowers are used.

Self-heal is reckoned among the vulnerary Plants, and is accounted serviceable for all Sorts of Wounds, and putrid Ulcers. It is restraining, and good for inward Bleedings, and making bloody Water; and is much used in Gargles, for Ulcers in the Mouth, Throat, or Gums, either the Juice, or a strong Decoction. *Miller's Bot. Off.*

Self-heal gives a pretty deep red Colour to the blue Paper; it is of an herby, styptic, and glutinous Taste, mixed with a very little Bitterness; from which we may conjecture, that the acid Part of the natural Salt of the Earth is in this Plant disengaged from a good deal of the acrid Part; and that, being united with abundance of Earth and Sulphur, it produces there a Salt which resembles Alum. This Mixture of Principles renders Self-heal vulnerary, astringent, and deterfive; and is an Ingredient in the Arquebuse Water, and in vulnerary Potions. *J. Bauhine* esteems a Lotion of it for Gunshot Wounds. It is prescribed in Ptifans, Broths, and Apozems, for spitting of Blood, for bloody Urine, for the too great or too frequent Flux of the Menfes, for the Bloody-flux, and for all Sorts of Hæmorrhages. It is used by way of Injection in deep Wounds, and by way of Clyster in the Bloody-flux. For Diseases of the Throat, Gargarisms of it must be frequently used. They bathe the Gums of scorbutic Persons with it, adding some Grains of Mastich. The distilled Water of the whole Plant, and the Conserve of its Flowers, may be used for the same Purposes. *Casalspinus* used the Leaves bruised, and applied in form of a Cataplasm, to suppurate Boils, and to heal Wounds. He used the Juice for the Ulcers of the Mouth, and, in great Pains of the Head, he bathed the Temples with it, after having mixed it with Oil of Roses and Vinegar. *J. Bauhine* added to it a little Rose-water, and gave it to drink to those who had been bitten by any venomous Creature. *Martyn's Tournefort.*

Prunella absterges and consolidates; its principal Use is in Wounds, especially of the Lungs, and in Coagulations of Blood. It is, also, frequently employed outwardly in Wounds, and in the Quinsey, and other Affections of the Mouth and Fauces. *Buxb.* This Plant is, also, of excellent Virtue in all inflammatory Distempers, Hæmorrhages, and Dysenteries, and in spitting or pissing of Blood. *Hist. Plant. adscript. Boerhaave.*

PRUNELLUS. See PRUNUS.

PRUNUS.

The Characters are;

The Calyx is monophyllous and quinquefid; the Flower roseaceous, pentapetalous, and furnished with thirty or more Stamina. The Ovary in the Bottom of the Calyx becomes an ovated or globous Fruit, containing under a thin, smooth Membrane, or Skin, a soft Pulp, in the Middle of which is inclosed an oblong or oval flatish Stone, acuminate at both Ends, and containing a single Kernel; the Pedicle of the Fruit is of a good Length.

Boerhaave mentions seven Species of *Prunus*; which are,

1. *Prunus*; sylvestris. *Ger.* 1313. *Emac.* 1497. *Park. Theat.* 1033. *C. B. P.* 444. *J. B.* 1. 193. *Raii Hist.* 2. 1527. *Synop.* 3. 462. *Boerb. Ind. A.* 2. 241. *Prunellus sylvestris.* *Offic. Acacia Germanica.* *Schrod.* THE SLOE-TREE, or BLACK THORN.

This is a Bush, or small Tree, whose tough Branches are full of hard sharp Thorns, sending forth its white five-leaved Flowers early in the Spring, before the Leaves appear, which are small and oblong, finely indented about the Edges. The Flowers are succeeded by small round Fruit growing on short Stalks, green at first, but, when ripe, of a fine purplish-black Colour, of a rough, sour, austere Taste, and not fit to be eaten till mellowed by the Frosts. The Sloe-bush grows every-where in the Hedges.

The Fruit is principally used, being restraining and binding, and good for all Kinds of Fluxes and Hæmorrhages. It is, likewise, of Service for Gargarisms for sore Mouths and Gums, and to fasten loose Teeth.

The Juice of Sloes, being boiled to a Consistence, is the *Acacia Germanica*, *Off.* which is now used instead of the true, and put into all the great Compositions. It is of a darkish Colour on the Outside, and redish within. *Miller's Bot. Off.*

The Leaves of the Sloe-tree are bitter, a little styptic, glutinous, and give a faint Tincture of Red to the blue Paper; but the Fruits give it as deep a Red as Alum; they are a little sour, and extremely styptic: Thus it is likely, that the natural Salt of the Earth predominates in the Leaves, where it is mix'd with a little fetid Oil; but that its acid Part, being disengaged in the Fruits, is united with the Earth, and forms a Salt resem-

bling Alum. *Tragus* found by several Experiments, that the distilled Water of the Sloe-tree is an excellent Remedy for the Pleurisy, and for the Oppressions of the Stomach: When this Author had not the distilled Water of these Flowers, he gave Wine, in which they had been macerated, to be drank by his Patients, or else made use of the same Wine distilled in Balneo Mariæ. He affirms, that those Fruits, preserved with Honey, are very good for the Dysentery, and all Sorts of Loosenesses. The Wine made of Sloes has the same Effect. *J. Bauhine* says, that in *Alfatia* they dry the Sloes in an Oven, and put them into their Must; and that renders them agreeable and astringent. *Matthioli* made use of the Decoction of the Fruits and Roots for Ulcers of the Mouth and Throat. The Juice of the Fruits allwages the Inflammation of the Eyes; the same Juice, thickened, is called *Acacia Recentiorum*, or *Germanorum*, because it is substituted in the room of the *Acacia* of the Antients, to cool and bind. *Wittichius* prescribes as a good Purgative, the Syrup made with several Infusions of the Flowers of this Tree. *Schroder* mentions it also. *Etmuller* relates, that a very strong Vinegar is obtained from the Juice of the green Fruits by distilling them in Balneo Mariæ. *Martyn's Tournefort.*

2. *Prunus*; fructu cerci coloris. *T.* 622.

3. *Prunus*; fructu majore; rotundo; rubro. *T.* 622.

4. *Prunus*; fructu maximo; rotundo; flavo & dulci. *T.* 622.

5. *Prunus*; fructu parvo, ex viridi flavesciente. *T.* 623.

6. *Prunus*; fructu parvo præcoci. *T.* 623.

7. *Prunus*; fructu magno, dulci, atro-cæruleo. *Tourn. Inst.* 622. *Boerb. Ind. A.* 2. 241. *Prunus Damascena.* *Offic.* *Pruna, magna, dulcia, atro-cærulea.* *C. B. P.* 443. *Pruna atro-cærulea, Theophrasto Bartyla, aliis Damascena dicuntur.* *Jonst. Dendr.* 77. THE DAMASK-PRUNE.

The best Plums, or Prunes, being formerly brought from *Damascus*, the Fruit has kept that Name ever since; though it is seldom or never brought from thence now, we making use of the Fruit that is brought from *France*, or the *Pruna Gallica*, *Offic.* which I take to be the Fruit of the *Prunus Damascena*, or Damson Plum, *Ger.* the great Damson or Damask-Plum of *Park. Parad.* They are brought over dried in great Quantities from *France*, being a larger and sweeter Plum than the common Damson.

Prunes are cooling and moistening, rendering the Body loose and soluble; they allwage Thirst, and mitigate the Heat and Acrimony of the Bile. A good Quantity of the Pulp is put into the lenitive Electuary.

Medicines deriving their Name from Prunes, are the *Electuarium Diaprunum*, *Lenitivum*, & *Solutivum*. See DIAPRUNUM. *Miller's Bot. Off.*

Besides the foregoing Species of *Prunus*, *Dale* mentions the two following;

1. *PRUNUS GALLICA.* *Offic. Prunus.* *C. B. P.* 443. *Prunus sativa.* *J. B.* 1. *Prunus domestica.* *Ger.* 1311. *Emac.* 1497. *Prunus vulgaris.* *Park. Theat.* 1511. *Prunus fructu parvo, dulci, atro-cæruleo.* *Tourn. Inst.* 622. THE COMMON PRUNE.

This Plant is frequently cultivated in Gardens, and flowers in April. It is transported dry to us from *Provence* and *Languedoc*, and its Gum is hard and pellucid. It is thought to be possessed of the same Virtues with the former. *Dale.*

2. *PRUNUS BRIGNOLENSIS.* *Offic. Prunus Brignoniensis fructu suavissimo.* *Tourn. Inst.* 632. *Prunus Brignolensis aut Brignolensis.* *Raii Hist.* 2. 1526. *Pruna ex flavo rufescentia, mixti saporis, gratissima.* *C. B. P.* 443. THE PRUNELLO.

These are small yellow Plums, brought over from *France* in little long Boxes; they are moist, flat, and without Stones.

They are seldom prescribed by Physicians; but being of a pleasant grateful Taste, and not subject to purge, they are frequently eaten by Persons in Fevers. *Miller's Bot. Off.*

PRURIGO. The Itch. See LEPROA. Or an Itching.

PRURITUS. The same as PRURIGO.

PSAISTE MAZA, ψαῖς μαζα, is expounded in *Galen's Exegetis*, by "a Maza worked up with Honey and Oil, because," says he, the *Psaiста* were so prepared." Now the *Psaiста*, according to *Hesychius*, were *Alphita* wet with Oil, or, as *Suidas* says, with Oil and Wine, which they burnt in Sacrifice to the Gods. *Psaiста* was, also, a Name for a sort of wide and round Cakes, by some called, also, ψαῖς (*psaiста*); agreeably to which, all the Copies read μαζαν ψαῖσιν, *Lib. πει τὸν ἐνδε παθῶν*, tho' *Calvus* seems to have read ψαῖσιν, which occurs in another Place of the same Book, where we find μαζαν δι ψαῖσιν ὡς μαλιστα, "a Maza very well work'd up with Oil and Honey;" but *Aldus* reads it here, too, ψαῖσιν, as he does, also, in another Place of the same Book.

PSAGDAS, ψαγδας, is expounded in *Galen's Exegetis* by *ῥις τε μύρον*, "a kind of Ointment," which is, also, the Exposition which *Erotian* gives of it, and for which he quotes *Eupolis*. But some Copies of *Erotian* read ψαδαι; and *Hesychius* expounds ψαδαι, ψαγδαι, by *μύρον ποικίλον*, "some sort

"sort of Ointment." Upon the Whole, it seems to be a foreign and barbarous Term. *Foefius*.

PSALACANTHA. *ψαλακάνθα*. *Suidas* informs us, that *Ptolemaeus Cytherius* wrote a Poem on the *Psalacantha*, which he said was an Herb possess'd of many extraordinary Virtues. *Photius*, from *Ptolemaeus Hephaestionis*, mentions it as an Egyptian Plant, with some fabulous Circumstances, not worth relating. Some, he says, represent it to be like the *Artemisia*; others like *Melilot*.

PSAMMISMOS, *ψαμμισμός*. A sort of Cure of the Dropsy, by covering the Body with Sand.

PSAPHEROS, *ψαφρός*, is expounded in *Galen's Exegeſis* by *ψαθυρός*, (*psathyros*) and *ψαφρόν*, *ψαφαρόν*, are the same as *ψαθυρόν*, *ψαφρόν*, *ψαδαρόν*, *ψαδνρόν* and all signify brittle, or friable, and are applied to such Foods as contain nothing of a fat or viscous Substance, but are tender, friable, or incoherent. *Galen, Lib. 3. de Alim.* The same Author, *Lib. 3. de Diff. Puls.* opposes their Signification to *γλισχρός*, (*glisthros*) viscid, or glutinous; and, *Lib. 11. de M. M.* expresses it by *κραυρός* (*crayos*); as *Aristotle, Lib. 4. Meteor.* does by *θραυστός*, (*thraustos*), Words importing Friability, and Looseness of Texture: *ψαφρόν*, in *Coac. 608.* is joined with *μαλθακόν*, and both are apply'd to Excrements of a loose and soft Texture, which are condemn'd; *ψαθαρόν διαχάρισμα* is the same as *ψαφαρόν*, and signifies loose, incoherent Excretions by Stool; and, in an Epithet, joined with *ξηρόν*, dry, *ψαφαρόν* is expounded also by *ξηρόν*, *δυχνρόν*, *ἀσθενές*, *ελαφρόν*, dry, equalid, weak, light. In *Coac. 583.* we read *ὔρον*, *ὕδατοςδες*, ἢ *τρεφαζυμένον ψαφρῶν*, *τρηχύτισι*. "Urine like Water, or disturbed with a loose, or rough, and sand-like Substance."

PSARON. The Name of a Powder described by *Aetius Tetrabib. 4. Serm. 2. C. 36.*

PSATHYROS *ψαθύρος*. The same as **PSAPHEROS**.

PSEGMA. *ψῆγμα*. A Name for the *Flor Aëris*. *Dioscorides*,

PSELAPHIE, *ψελαφίη*, (from *ψελαφάω*, properly, to touch the Strings, in playing on a musical Instrument, as *Eustathius in Iliad.* observes; but commonly signifying to feel or grope like Persons in a Delirium) in *Hippocrates, Lib. περὶ εὐσχημ* signifies Friction with the Hands, and is reckoned Part of the Office of a Physician, which he should always be in a Readiness to perform, when the Subject requir'd it.

PSEUDES, *ψευδής*, False, or Bastard. Hence the following Articles, beginning with *Pseudo*, are derived.

PSEUDO-ACACIA.

The Characters are,

It has a papilionaceous Flower, from whose Calyx rises the Ovary, involved in a fimbriated Membrane, and becoming, at last, a flat Pod, opening into two Parts, full of Kidney-shap'd Seeds.

Boerhaave mentions two Species of *Pseudo-Acacia*; which are,

1. *Pseudo-Acacia, vulgaris.* *Tourn. Inst. 649. Boerb. Ind. A. 2. 39. Pseudo-Acacia.* *Offic. Pseudo-Acacia Americana Robini.* *Park. Theat. 1550. Acacia Americana Folis coluteæ, monococcos, siliquis echinatis.* *Raii Hist. 2. 1719. BASTARD ACACIA.*

This Plant is naturally produced in *America*; but is with us found in the Gardens of the Curious. I know nothing of its Use and Virtues; at *Paris*, however, a distilled Water is prepared from its Flowers. *Dale.*

According to *Robinus*, the Leaves of this Plant when boiled and expressed, purge in the same manner with *Sena*. Others recommend a Decoction of the Leaves, for its corroborating and refrigerating Quality. It is exhibited in Dysenteries, but excites violent Pains and Flatulences. *Hist. Plant. adscript. Boerb.*

2. *Pseudo-Acacia; siliquis glabris; Acacia Virginiana, siliquis glabris.* *Raii Hist. 1719. Boerb. Ind. alt. Plant. Vol. 2.*

PSEUDO-ACORUS. See **ACORUS ADULTERINUS**.

PSEUDO-APOCYNUM, *hederaceum, Americanum, tubuloso Flore phæniceo, Fraxini Folio.* A Name, in *Boerhaave*, for the *Bignonia, Americana, Fraxini Folio; Flore amplo, phæniceo.*

Pseudo-Apocynum, Americanum, capreolatum, tetraphyllum, tubuloso Flore, foliis longioribus. A Name, also, in *Boerhaave*, for the *Bignonia, Americana, capreolis donata, siliqua breviori.*

PSEUDO-ASPHODELUS. *Ray*, in *Hist. Plant.* takes notice of three Plants under this Name. The first is the;

Pseudo-Asphodelus minor, sive Pumilio, Folio Iridis, sive 2 Clus.

Pseudo-Asphodelus Alpinus, C. B. Minor, Folio Iridis. THE LESSER BASTARD ASPHODEL. *Park. Asphodelus Lancastrie, Lancashire Asphodil.*

I find no medicinal Virtues ascribed to this Plant.

The second is the,

Pseudo-Asphodelus palustris vulgaris nostras. Asphodelus Lancastrie verus. *Ger. Emac. descr. TRUE LANCASHIRE ASPHODEL.* *Pseudo-Asphodelus primus, Clus. Palustris Anglicus. C. B. Luteus, acrifolius, palustris Anglicus. Lobelii I. B.*

This is said to be an excellent Application for the Cure of Wounds. Women dye their Hair with the Flowers of this Plant, macerated in a *Lixivium*.

The third is the

Pseudo-Asphodelus palustris, Scoticus minimus. THE LEAST SCOTISH ASPHODEL.

No medicinal Virtues are ascribed to this Species.

PSEUDO-ASTHMA. An *Asthma* excited by an Abscess, or Vomica, in the Lungs.

PSEUDO-BUNIAS. See **BARBAREA**.

PSEUDO-BUNIUM. See **BUNIAS**.

PSEUDO-CADMIA. A Name for the **ANTICADMITA**.

PSEUDO-CAPSICUM A Name for the *Solanum, fruticosum, bacciferum*.

PSEUDO-CHAMÆBUXUS. A Name for the *Polygala, frutescens, Folio buxi, Flore maximo*.

PSEUDO-CHINA. A Name for the *Senecio, Asiaticus, Jacobææ Folio, radice lignosa, China officinarum dicta nobis*.

PSEUDO-COLOCYNTHIS. A Name for the *Pepo, fructu ovato variegato*.

PSEUDO-CORALLIUM. A Name for the **CORALLIUM NIGRUM**.

PSEUDO-COSTUS. A Name for the *Pastinaca, Olusatris folio*.

PSEUDO-CYTISUS. See **CYTISUS**.

PSEUDO-DICTAMNUS.

The Characters are;

The Root is perennial; the Calyx is orbicular, open, and contains the ripe Seeds, under Covert, as it were, in a Sawcer. The Galea is erect, fornicated, or arched, and bifid; and the Beard tripartite. The Whorles of the Flowers, resemble those of white Horehound; and are disposed in close Order, with aculeated Apices.

Boerhaave mentions eight Species of *Pseudo-dictamnus*; which are,

1. *Pseudo-dictamnus, acetabulis moluccæ. C. B. P. 222. M. H. 3. 378.*

2. *Pseudo-dictamnus, verticillatus, inodorus. C. B. P. 222. Tourn. Inst. 188. Boerb. Ind. A. 173. Pseudo-dictamnus. Offic. Park. Theat. 27. Pseudo-dictamnus. Ger. 651. Emac. 797. Dictamnus adulterinum, quibusdam verticillatum, vel potius Gnaphalium veterum. J. B. 3. 255. Marrubium Pseudo-dictamnus dictum. Raii Hist. 1. 557. Gnaphalium veterum, Centunculus, Dictamnus adulterinum quibusdam. Chab. 410. BASTARD DITTANY.*

This Plant is cultivated in Gardens, and flowers in *July*. The Herb is only used, and as in external Appearance, so in Virtues, it agrees with Horehound. *Dale.*

The Virtues of this Plant are by some said to be the same with those of the Dittany; but this is by no means true, since the odorous Smell of the former is not so strong as that of the latter. It is by some thought to be the *Alypion* of the Antients, but unjustly. *Hist. Plant. adscript. Boerhaav.*

3. *Pseudo-dictamnus, Hispanicus, amplissimo Folio nigricante, &c villoso. T. 188.*

4. *Pseudo-dictamnus; Hispanicus, Folio Scrophulariæ. T. 188. Galeopsis Anguillaria. 278.*

5. *Pseudo-dictamnus, Hispanicus, amplissimo Folio candicante &c villoso. T. 188. Marrubium subrotundo Folio. Boc. Mus. 2. 167. Tab. 122.*

6. *Pseudo-dictamnus, Africanus, foliis subrotundis, subtus incanis. H. A. 2. 179. Marrubium rotundifolium, Africanum, Folio Hederæ terrestris. Flor. 2. 67.*

7. *Pseudo-dictamnus, Hispanicus, foliis crispis &c rugosis. T. 188. Marrubium, Dictamni spurii foliis & Facie. Par. Bat.*

8. *Pseudo-dictamnus, Hispanicus, Folio amplissimo, candicante &c villoso. T. 188. Boerb. Ind. alt. Plant. Vol. 1.*

PSEUDO-DIGITALIS. A Name for the *Dracocephalon; Americanum*.

PSEUDO-FUMARIA. A Name in *Boerhaave* for the **CAMPNOIDES**.

PSEUDO-GNAPHALIUM. A Name for the *Gnaphalodes, Lufitanica*.

PSEUDO-HELICHRYSUM. A Name for the *Helicbrysum, sylvestre, latifolium, capitulis conglobatis*.

PSEUDO-HELICHRYSUM FRUTESCENS. A Name for the *Senecio, Africanus, Folio retuso*.

PSEUDO-HELICHRYSUM VIRGINIANUM. A Name for the *Senecio, Virginianus, arboreſcens, atriplicis Folio*.

PSEUDO-HELLEBORUS. A Name for the *Helleboro-Ranunculus, Flore luteo globoso*.

Pseudo-Helleborus Ranunculoides. A Name for the *Populago, Flore majore*; and for the *Populago, flore pleno*.

PSEUDO-IPPECACUANHA. See **APOCYNUM**.

PSEUDO-IRIS. See **ACORUS ADULTERINUS**.

PSEUDO-LIEN. A Name for certain Glands observed by *Ruyſib* adjacent to the Spleen.

PSEUDO-LOTUS. A Name for the **GUAJACANA**.

PSEUDO-LYSIMACHIUM. A Name for the *Salicaria, vulgaris purpurea, foliis oblongis*; and for the *Veronica, spicata, longifolia*.

PSEUDO-MARRUBIUM. A Name for the *Lycopus, palustris, glaber*; and for the *Lycopus, foliis in profundas laciniis dissectis*.

PSEUDO-MELANTHIUM. A Name for the *Lychnis, segetum major*.

PSEUDO-MELISSA. A Name for the *Melissa, humilis, latifolia, maximo flore, purpurascens*.

PSEUDO-MOLA. A false Mole, form'd by a Piece of the *Placenta*, left in the Uterus after the Exclusion of the *Fœtus*.

PSEUDO-NARCISSUS. A Name in *Boerhaave* for several Sorts of *Narcissus*.

PSEUDO-NARDUS. A Name for the *Lavandula*; *latifolia*; and for the *Lavandula*; *angustifolia*; *Flore albo*.

PSEUDO-ORCHIS. A Name in *Boerhaave* for the *Orchis*; *lilifolia*; *minor*; *fabuletorum Zelandiæ & Bataviæ*.

PSEUDO-PETASITES. A Name for the *Petasites*; *Africanus*; *Calthæ palustris Folio*.

PSEUDO-POLYPUS. A Bastard Polypus.

PSEUDO-RHABBARUM. A Name for the *Thalictrum*; *major*; *siliqua angulosa, aut striata*; and for the *Thalictrum*; *major*; *flavum*; *staminibus luteis*; *vel glauco Folio*.

PSEUDO-RUBIA. A Name for the *Rubeola*; *latiore Folio*; and for the *Rubeola*; *angustiore Folio*.

PSEUDO-SALVIA. A Name for the *Phlomis*; *fruticosa*; *salvia Folio latiore & rotundiore*; for the *Phlomis*; *fruticosa*; *salvia Folio longiore & angustiore*; and for the *Phlomis*; *fruticosa*; *Folio subrotundo, brevioris*; *Flore luteo*.

PSEUDO-SELINUM. A Name for the *Caucalis*; *Seminis aspero*; *Flosculis rubentibus*.

PSEUDO-STACHYS. A Name for the *Stachys*; *Cretica*; *pro Pseudo-stachyde L. in prodromo describitur*; for the *Stachys*; *Alpina*; *magna*; *Flore ex albo rubescens*; and for the *Galeopsis*; *Alpina*; *Betonica Folio*; *Flore variegato*.

PSEUDO-STRUTHIUM. A Name for the *lateola Herba*; *salicis Folio*.

PSEUDO-SYCOMORUS. See *AZEDARACH*.

PSEUDO-VALERIANA. A Name for several Sorts of *VALERIANA*.

PSIDA. The external Rind of the Pomegranate.

PSILOTHRON. *ψιλωθρον*. A Depilatory.

PSIMMYTHION. *ψιμμυθιον*. Cerufs.

PSINKUS. Cerufs. *Rulandus*.

PSITTACION. *ψιττακιον*. The Name of a discutient Plaister, described by *Paulus Aegineta*, L. 7. C. 17. *Scribonius Largus* describes a *Collyrium* by the Name of *Collyrium Psittacinum*. N^o. 27.

PSITTACUS. The Parrot.

PSOÆ. *ψοαι*. The Name of two Pair of Muscles of the Loins.

The first is the

PSOAS, five, LUMBARIS INTERNUS.

This is a long thick Muscle, situated in the Abdomen, on the lumbar Region, adhering to the Vertebrae of the Loins, from the posterior Part of the Os Ilium, to the anterior Part near the Thigh.

It is fixed above to the last Vertebra of the Back, and to all those of the Loins, that is, to the lateral Parts of the Bodies of these Vertebrae, and to the Roots of their transverse Apophyses. The Insertions in the Bodies of the Vertebrae, are by a kind of Digitations, and are very little tendinous.

From thence, the Muscle runs down laterally over the Os Ilium, on one Side of the Iliac Muscle, and passes under the *Ligamentum Fallopii*, between the anterior, inferior Spine of the Os Ilium, and that Eminence, which, from its Situation, may be termed *Ilio-Pectinea*.

Before it goes out of the Abdomen, it unites with the *Iliacus*, and is sometimes fixed by a few fleshy Fibres, in the Outside of the Eminence last mentioned. It afterwards covers the fore Side of the Head of the Os Femoris, and is inserted in the fore Part of the little Trochanter, by an oblique Tendon, which is folded double from behind forward.

This Muscle is sometimes accompanied by another smaller Muscle almost like it, called *Psoas parvus*, of which hereafter.

The *Psoas* bends the Thigh on the Pelvis, or brings it forward; it may, also, move the Pelvis on the Thighs, and hinder it from being carried along with the rest of the Trunk, when the Body is inclined backward, while we sit, having the lower Extremities fixed by some external Force. In this Situation it may, also, move the Vertebrae of the Loins. *Winslow's Anatomy*.

The second is the

PSOAS PARVUS.

This is a long slender Muscle, lying upon the *Psoas major*: It is sometimes wanting; and *Riolanus*, who met with it often in Men, takes notice of his having found it once in a Woman, as a Thing very extraordinary. As for my Part, I found it several times in Women, before I ever met with it in Men; and I still continue to observe it most frequently in that Sex.

It is fixed above by a short Tendon, sometimes to the last transverse Apophysis of the Back, or higher; sometimes to the first of the Loins, and sometimes to both: From thence it runs down wholly fleshy, and more or less complex, on the great *Psoas*, in a Direction a little oblique.

Having reached the middle of the *Regio lumbaris* or thereabouts, it forms a slender flat Tendon, which, gradually increasing in Breadth, like a thin Aponeurosis runs over the *Psoas major*, and *Iliacus internus*, at their Union, and from thence down to the Symphysis of the Os Pubis, and Os Ilium; and is inserted principally in the Crista of the Os Pubis, above the Insertion of the *Pectineus*, sometimes sending an Aponeurotic Lamina farther down.

Besides the *Psoas parvus*, there is another still smaller, between it and the *Vertebrae*, inserted much in the same manner. This Muscle I discovered in the Year 1713.

The *Psoas parvus*, when it is found, serves to sustain the Pelvis, much in the same manner with the *Musculi Recti* of the Abdomen; in climbing. But when we stand, we have no need of such a Support, the Pelvis resting then upon the *Os Femoris*, in such a manner, as that the largest Portion thereof, and that which supports the whole Body, lies behind that *Fulcrum*, and the smallest Part before. It may, also, serve to hinder the vertebral Pillar from bending backward on some Occasions. *Winslow's Anatomy*.

PSOMISMA. *ψωμισμα*. Meat which is put into the Mouth of a Child.

PSOPHOS. *ψοφος*. A Noise; a Sound. *Ψοφοι εν τῷ στήθει*, are Noises, or Sounds, proceeding from the Breast, occasioned by flatulent Matter attempted to be expectorated. *Ψοφῳδεις* (*ψοφῳδεις*) are those who start and tremble at every Noise; such are they who labour under a Phrensy or Delirium, 1 *Prorrhet.* 16. *Coac.* 96. where the *ψοφῳδεις* are expressed by *ψοφῳ καθ'απ'σβημενοι*, which *Galen* in his *Exegesis* expounds by *ψοφῳ παθιας διασπαρμυνοι*. "Such as are very quick in their Perception of a Noise or Sound."

PSORA. *ψωρα*. A Species of Itch. See *LEPRA*.

PSORIASIS. A Species of Itch affecting the *Scrotum*. *Blumcard*.

PSORICA. Medicines for the Itch.

PSOROPHTHALMIA. A *Psora*, or scurfy Disorder of the Eye-lids.

PSUCHAGOGICA; from *ψυχη*, Life. Medicines which recal Life in an Apoplexy, or Syncope.

PSYCHOTROPHON. A Name for Betony. *Dioscorides*, L. 4. C. 1.

PSYCHROLUSIA. *ψυχρολουσία*, or **PSYCHROLUTRON**, *ψυχρολουτρον*, from *ψυχρος*, cold, and *λεω*, to wash. Cold-bathing, or a Cold-bath. Sir *John Floyer* has given this as a Title to a Book wrote upon the Subject of Cold-bathing.

PSYCTICA. Refrigerating Remedies.

PSYDRACIA. A Species of Pustule, of which *Trallian*, L. 1. C. 5. gives the following Definition. These are small Tubercles of the Head, which resemble Pustules, and corrode the Skin: But *Exanthemata* are superficial Exulcerations of the Skin, of a redish Colour, and rough to the Touch. Both these Disorders, especially when of the moist Kind, are cured by an Ointment thus prepared:

Take of Litharge and Cerufs, each four Ounces; of Alum, and the green Leaves of Rue, each two Ounces; and of Vinegar, and the Oil of Myrtle, a sufficient Quantity to make an Ointment.

PSYGMATA. *ψυγματα*. Refrigerating Medicines, either internal, or external.

PSYLLI. A People of *Africa*, celebrated by the Antients, for curing the Wounds of venomous Bites by sucking them; but *Celsus*, L. 9. C. 27. is of Opinion, that any one may do the same thing without any Injury to themselves.

PSYLLIUM.

The Characters are;

It agrees, in all respects, with the *Plantago*, and *Coronopus*; only the Stalks are leafy and ramous, or divided into a Multitude of Branches.

Boerhaave mentions four Species of this Plant; which are,

1. *Psyllium*; *majus*; *erectum*; *latifolium*; *annuum*. *Boerh. Ind.* A. 2. 101. *Psyllium*. Offic. *Psyllium vulgare*. *Park. Theat.* 277. *Psyllium majus erectum*. J. B. 3. 513. C. B. P. 191. *Tourn. Inst.* 128. *Psyllium five Pulicaris Herba*. *Ger.* 471. *Emac.* 587. *Plantago caulifera Psyllium dista*. *Raii Hist.* 1. **FLEAWORT.**

Fleawort has round hairy Stalks, a Foot or more high, beset at the Joints with two, and sometimes three, long, narrow, sharp-pointed, somewhat hairy Leaves, often lightly cut in about the Edges. From the Bosom of these, toward the upper Part of the Stalks, arise pretty long slender Foot-stalks, bearing at the Ends round short Spikes of small staminate Flowers, of four Leaves apiece, with Apices standing out, and somewhat resembling the Heads of the long Plantain; and are succeeded by round Seed-vessels; containing two round shining reddish-brown Seeds, that look like Fleas, whence it takes its Name. The Root is stringy and fibrous; it grows in the *Southern* Parts of *France*, from whence we have the Seed which only is used.

Some attribute a purgative Quality to this Seed, but we use it only to extract a Mucilage for sore Mouths and Throats, and to help Thrushes and Quinsys. It is, likewise, useful to obtund sharp acrimonious Humours, which corrode the Bowels, and cause Dysenteries. Outwardly it is good for sore, inflamed, Blood-shot Eyes. *Miller's Bot. Off.*

The Salt of this Plant resembles that of Coral; but is mixed with a little Sal Ammoniac, a great deal of Sulphur, and terrestrial Parts.

By the chymical Analysis, it yields a great deal of Oil and Earth, no volatile concrete Salt, a little urinous Spirit, and several acid Liquors.

P T E

Psyllium-seed is used in the *Electuary de Psyllio*; but its purgative Virtue ought to be attributed to the Scammony, and the other Cathartics. The Mucilage of Psyllium is very lenifying, and good to allwage the Inflammation of the Eyes: It is given in a Clyster, for the Dysentery, and Inflammation of the Kidneys. *Martyn's Tournesfort.*

2. Psyllium; majus; supinum; angustifolium & perenne.
3. Psyllium; maximum; ex Littore Veneto.
4. Psyllium Indicum; foliis crenatis. *J. B. 3. 514. Boerb. Ind. alt. Plant. Vol. 2.*

PSYTHIOS. An Epithet of Wine, importing Sweetness.
PTARMICA.

The Characters are;

The Leaves are serrated, crenated, dissected, and void of Smell; the Calyx is squamous; the Flowers are altogether white, and generally disposed in Umbellas; the Seeds are very thin and slender.

Boerhaave mentions nine Species of Ptarmica; which are,

1. Ptarmica; vulgaris; folio longo, serrato; flore albo. *J. B. 3. 147. Boerb. Ind. alt. 111. Tourn. Inst. 496. Ptarmica. Offic. Ger. 483. Emac. 606. Raii Hist. 1. 344. Synop. 91. Ptarmica vulgaris. Park. 858. Dracunculus serrato folio pratensis. C. B. P. 98. Achillea foliis integris minutissime serratis. Act. Reg. Par. Ann. 1720. 321. SNEEZWORT, BASTARD PELLITORY.*

From a woody, creeping, fibrous Root, of an hot biting Taste, this Plant sends out upright Stalks a Foot or more high, stiff, and not much branched, having long narrow Leaves, finely serrated about the Edges, growing on them without any Order: The Flowers grow Umbel-fashion, on the Tops of the Stalks, consisting of a Border of white Petals, set about a fistular Thrum; they are larger than the Flowers of Yarrow: It grows in moist Meadows, and in watery Places; and flowers in July.

It is of an hot biting Taste; and, therefore, it is sometimes put into Salads, to correct the Coldness of other Herbs: The Root, held in the Mouth, helps the Tooth-ach, by evacuating the Rheum, like Pellitory of Spain: The Powder of the Herb, snuffed up the Nose, causes Sneezing, and cleanses the Head of tough slimy Humours. *Miller's Bot. Off.*

2. Ptarmica; vulgaris; pleno flore. *Clus. H. 12. Dracunculus, pratensis, flore pleno. C. B. P. 98.*
3. Ptarmica; foliis profundè serratis, lætè viridibus; elatior. *H. L. 694. Flor. 2. 51. Dracunculus Alpinus, latiore folio serratus. Sch. B. P.*
4. Ptarmica; foliis profunde serratis; minor & humilior. *Flor. 2. 51.*
5. Ptarmica; vulgaris; folio longo; serrato & humilior. *Flor. 2. 51.*
6. Ptarmica; Alpina; incanis, serratis, foliis. *H. L. 694.*
7. Ptarmica; incana; humilis; foliis laciniatis, Absinthii semulis. *H. L. 510. Absinthium Alpinum, umbelliferum, latifolium. C. B. P. 139.*
8. Ptarmica; Alpina, Tanacetii foliis, flore purpureo. *T. 497. Millefolium montanum, purpureum, Tanacetii foliis. M. H. 3. 39.*
9. Ptarmica; Orientalis; foliis Santoline incanis; flore pallido. *Vaill. Boerb. Ind. alt. Plant. Vol. 1.*

The first and second Species of this Plant are of an heating and penetrating Quality. The Antients exhibited it in all Disorders, where it was necessary to stimulate and open; for which Purposes it is very proper. By its Heat it corroborates the Stomach: Its Leaves, if chewed, procure a copious Discharge of Saliva; for which Reason they are beneficial in Tooth-achs: They are, also, exhibited in mucous and viscid Obstructions of the Fauces, where Sweats are to be excited. The Juice of this Plant, when boiled, is proper in all those Disorders for which Feverfew is recommended; but does not contain so large a Quantity of Oil, and, consequently, is not so adhesive. *Hist. Plant. adscript. Boerhaav.*

PTERIS, πτερίς. Fern.

PTERNA, πτέρνα. The CALCANEUM.

PTERYGION, πτερυγιον. A Film of the Eye. See OCULUS.

But Pterygion, in *Celsus, Lib. 6. Cap. 19.* is a Disorder of the Fingers: The Description and Cure of which he gives in the following manner:

Old Ulcers of the Fingers are most commodiously cured by Lycium, or boiled Amurea, with an Addition of Wine to each. In the Nails there sometimes arises a Species of Caruncle, accompanied with great Pain, and by the *Greeks* called πτερίσιον. In order to cure this Disorder, we must dissolve round Melian Alum in Water, till it is of the Consistence of Honey. Then we must add a Quantity of Honey, equal to that of the Alum, and mix them with a Spatula, till the Preparation has assumed a Saffron-colour. With this the Parts affected are to be anointed. Some, for the same Purpose, rather choose a Decoction

P T I

of equal Quantities of dry Alum, and Honey, mixed together. If the Pterygia are not, by this means, removed, they are to be extirpated, and the Fingers are to be fomented with a Decoction of Vervain, and the following Medicine.

Take of Chalcitis, Pomegranate-peel, and the Squamæ Æris, each a proper Quantity: Mix them with a fat Fig; boil gently in Honey, and apply to the Part affected. Or,

Take of burnt Paper, Auripigmentum, and native Sulphur, each an equal Quantity: Mix with a Cerate, prepared of Oil of Myrtle, and apply to the Part. Or,

Take of the Powder of Verdegrise, one Dram; and of the Squamæ Æris, two Drams: Mix with a sufficient Quantity of Honey, and apply to the Part affected. Or.

Mix equal Parts of Lime-stone, Chalcitis, and Auripigmentum, and apply to the Part.

These Medicines, when applied, are to be covered with a Linen Cloth, dipt in Water. On the third Day, the Dressing is to be removed; the dry Parts, if any, are to be cut off, and the like Dressing is again to be applied. If the Disorder is not removed by these means, the Part affected is to be cleansed with the Knife, cauterized with small Irons, and cured like other Burns.

PTERYGODEËS, πτερυγόδες, in *Hippocrates*, are those People whose Chests are narrow and flat, so that their Scapulæ are prominent, like Wings. Such Persons have been always esteemed subject to Consumptions.

PTERYGOIDES PROCESSUS. The Pterygoide, or Wing-like Processes of the Os Sphenoides. See CAPUT.

PTERYGOPALATINUS MUSCULUS. A Name of a Muscle of the UVULA; which see.

PTERYGOPHARYNGÆUS MUSCULUS. A Muscle of the Fauces. See OESOPHAGUS.

PTERYGOSTAPHYLINI MUSCULI. Some Muscles of the Uvula are thus called. See UVULA.

PTILOSIS, πτελωσις, from πτελος, a Person who has lost his Eye-lashes. A Baldness of the Eye-lashes. *Paulus Ægineta, Lib. 3. Cap. 22.* says, the Ptilosis and Madarosis are Disorders of the external Margins of the Eye-lids. The Madarosis is only a Falling off of their Hairs, produced by a Defluxion of acrid Humours; whereas, in a Ptilosis, the Margins of the Eye-lids become thick and callous; so that it is a Disorder complicated of a Madarosis, and an hard Lippitude: For which Reason the Remedies proper for the one are, also, conducive to the Removal of the other. For procuring the Growth of the Hairs, and preventing an Itching and Corrosion of the Corners of the Eyes, the best Medicine is that of *Philoxenes*, distinguished by the Epithet dry. For removing a Dimness of Sight, the following Preparation is excellent:

Take of Cadmia, eight Drams; of Sal Ammoniac, two Drams; of Saffron, and Spikenard, each two Drams; and of white Pepper, one Dram: Mix all together for Use. Antimony, also, answers the same Purpose.

For a Corrosion of the Corners of the Eyes, and a Ptilosis:

Take of calcined Antimony, extinguished in Womens Milk, thirteen Drams; of Aloes, Myrrh, and Spikenard, each two Drams; and of calcined Barley, carefully triturated, four Drams: Mix, and use dry.

Another Medicine for a Ptilosis, and Corrosion of the Eye-lids, is thus prepared:

Take of the Marrow of an Ox's Right fore Leg, a sufficient Quantity; triturate it duly with Soot, and use it.

The Soot intended for this Purpose is to be thus prepared: Immerse a sufficient Quantity of Paper in the Oleum Sesaminum: Put the Paper in a Lamp, kindle it, and hold above it a smooth Shell, or brazen Vessel, in order to collect the Soot, which, when triturated with the above-mentioned Marrow, is to be used. The Rennet of a Calf is, also, excellent for the same Purpose. For a Milphosis, an Increase of Flesh in the Corners of the Eyes, and other inveterate Disorders of them, *Sofander* directs the following Medicine:

Take of Cadmia, Antimony, crude Chalcitis, and crude Misy, each eight Drams: Bruise these; mix them with Honey, and torrefy them, after extinguishing them in Wine, and triturating them: Add to them, of Spikenard, two

P T I

two Drams; of torrefied Saffron, two Drams; and of Pepper, one Dram: All these, when triturated together; are to be used.

The more simple Medicines contributing to the Cure of a Ptilosis, and a Corrosion of the Eye-lids, are boiled Amurca, Indian Lycium, and Armenian Stone, used by the Painters; which last, when mixed with Water, and used by way of Ointment, consumes the peccant Humours, and augments the natural Hairs; the Rust of Iron, triturated for many Days in the Heat of the Sun, and reduced to the Form of a Collyrium, with Wine and Myrrh; and Spodium, mixed with the Juice of Onions.

PTISSANA, *five* PTISANA, *πισσάνη* ἢ *πισάνη*, from *πίσσω*, to decorticate, bruise, or pound. Ptisan, or Ptisan, is properly Barley decorticated, or deprived of its Hulls; or, as *Suidas* expounds the Word, ἡ κεκομμένη κελύξ, "pounded Barley;" because the antient Way of clearing Barley from its Hulls was not by grinding, as it is now performed, but by pounding in a Mortar: For the Antients, in preparing their Ptissana, first sprinkled their Barley with Water; then left it to swell; afterwards dried it in the Sun; and then pounded it in a Mortar, with a wooden Pestle, till it was separated from its Hulls; and then reposit it. Some, after wetting their Barley, and drying it in the Sun; as before, pounded it in a Mortar till it was deprived of its Hulls; then ground it to a Meal; and, afterwards, boiled it for a very considerable Time, to deprive it, as they imagined, of its Flatulency; then they dried it, and reduced it into small Lumps, or Balls, with which they made forbile Liquors on occasion. Others, again, as we are informed by *Constant. Casar*, *Lib. 12. de Agricultura*, after macerating, cleansing, decortivating, and drying their Barley in the Sun, pounded it over-again; and, after giving it a second Drying in the Sun, before they reposit it, sprinkled it over with the thin Particles which they had beaten out in pounding it, because they had found them to contribute towards its Preservation.

Though Ptisana was properly prepared only of Barley, yet it used to be made, also, of other Grain, as of Wheat, Alica, Spelt, Rice, and Lentils; but, then, it was not called simply *Ptissana*, but with an Addition, expressing the Grain of which it was prepared, as, when they called it *πισσάνην πυρίνην*, "Wheaten Ptisan;" *χονδροπισσάνην*, "Ptisan made of Alica;" *τὴν ἐκ ζιζάνης ἢ ἐκ ῥυζὸς πισσάνην*, "Ptisan prepared of Spelt, or Rice;" and so of the rest. Ptisan, thus prepared, was reserved for Use, with a prudent Regard to Health, which deserves Imitation; and, when Occasion required, was ready at hand, to be boiled in Water. There were different Ways of boiling it; but the most common Method among the Greeks was that described by *Galen*, *Lib. 1. de Alimentis*, and is as follows: They boiled a Portion of Ptisan in ten, or, as *Paulus* says, in fifteen times the Quantity of Water, taking care to make it swell as much as possible, during the Time of boiling; for what readily swells, and that to a considerable Degree, is esteemed the best; as, on the contrary, what swells but little and slowly, is accounted the worst. When it is swelled up to a considerable Degree, they pour in a little Vinegar upon it, and then a little Oil; but this last may be added at the Beginning: When it is perfectly boiled, they sprinkle it with powdered Salt, without any other Addition, except, perhaps, of a small Quantity of Dill, or Leeks. Thus *Galen*. And this is the best Way of preparing Ptisan; and far to be preferred to that where many superfluous Ingredients are unskillfully added, in order to season it; for some added Amylum, others Sapa; and some put Honey and Cumin to it, making of it an Hotch-potch, rather than a Ptisan; and, perhaps, they had some Reason for thus preparing it, which might be with a View to attenuate its Grossness, correct its Viscidity, or discuss its Flatulences. We who far excel the Antients in Delicacy, and, in point of Cookery, outdo *Apicius* himself, (who, *Lib. 4. de Obsoniis*, speaks of those superfluous Seasonings) despise them all, and are contented with putting thereto some triturated Almonds and Sugar, with a moderate Quantity of Salt, which are indeed of some Efficacy against the Grossness, Viscidity, and Flatulency of the Barley; but far inferior, in that respect, to Leeks and Dill, which are not only grateful to the Palate, but not a little conducive to Health.

Ptissana, thus boiled, as aforesaid, is no longer called *Ptissana*, but *πισσάνης χυλὸς* ἢ *βήρυμα*, "the Cream or Soup of Ptisan," or, what is the same Thing, *Ptissanae Jus vel Succus*, "the Broth, Gruel, or Juice of Ptisan." *Celsus* usually calls the Broth of entire Barley, boiled till it bursts, *Cremor Hordei*, "Cream of Barley;" and prescribes it in bilious and burning Fevers.

Πτισσάνη, "Ptisan used simply;" *ἅλη πισσάνη*, "entire Ptisan;" and *πισσάνη κελυβάρις*, "Barley Ptisan;" in

P U L

Hippocrates, signify all three the same Thing, that is, Ptisan not strained: For if, after boiling, you strain it, and set aside the Liqueur, this Liqueur is neither called *entire Ptisan*, nor *Barley Ptisan*; nor simply *Ptisan*, but only *χυλὸς πισσάνης*; "the Juice of Ptisan." Thus *Galen*, *Com. in Lib. de R. V. 1. A. In Lib. 2. Epid.* near the Beginning, this entire or unstrained Ptisan is called *πισσάνη παχύν*, "thick Ptisan." *Gorræus. Foetus.*

See *Hippocrates's Treatise, de Ratione Vietus in Acutis*, under the Article *ALCALI*.

PTOLEMÆI CHIRURGI MEDICAMENTUM. The Name of a Medicine mentioned by *Celsus*, *Lib. 6. Cap. 7*.

PTOLEMÆI EMPLASTRUM. The Name of a Plaister mentioned by *Matcellus Empiricus*, *Cap. 36*.

PTOLEMÆI EVERGETÆ STOMATICA. The Name of a Medicine calculated for the Mouth, and described by *Matcellus Empiricus*, *Cap. 14*.

PTOLEMÆI REGIS COLLYRIUM. The Name of a Collyrium, mentioned by *Actius*, *Tetr. 2. Serm. 4. Cap. 110*.

PTOSIS, *πτῶσις*, from *πτίω*, to fall. This imports falling down, and is a Disorder of the Eye-lid, consisting in the Descent of the superior Eye-lid, either on account of a Palsy of the Muscle, which should elevate it; or a Flux of Humours, which depresses it.

PTYALAGOGA, from *πτύελον*, Saliva, or Spittle; and *ἄγω*, to bring away. Medicines which promote a Discharge of Saliva.

PTYALISMOS, *πτυαλισμός*. A frequent and copious Discharge of Saliva. *Hippocrates*. Among the Moderns, it generally signifies a Salivation excited by Mercury.

PTYAS. The Name of a Species of Asp. See *ASPIDES*.

PTYELON, *πτύελον*. The Saliva, Spit, or Spittle. See *SPUTUM*.

PTYGMATA, *πτυγμάτα*, from *πτύσσω*, to fold. Folded Cloths. *Cælius Aurelianus*. Perhaps what we call *Staphs*.

PTYSIS, *πτύσις*. A Defluxion of Humours upon the Thorax, or Lungs. *Cælius Aurelianus*, *Chron. Lib. 2. Cap. 7*.

PTYSIS, also, implies Exputition, or Spitting.

PTYSMA, *πτύσμα*. The Spit, or what is brought up by Spitting, or Expectoration.

PTYSMAGOGA. Medicines which promote a Discharge of Saliva.

PUBES. See *ABDOMEN*.

PUBIS OS. See *INNOMINATA OSSA*.

PUCHAMIAS. The Name of a Tree which grows in *Virginia*, bearing a Fruit like a Medlar, extremely astringent, whilst immature; but, when ripe, of a delicious Taste. *Raii Hist. Plant.*

PUDENDA. The private Parts in both Sexes.

PUDENDAGRA. The Venereal Disease.

PUERPERA. A lying-in Woman.

PUFFINUS. A Sea-bird, which the *French* call a *Macreufe*, that is reckoned in the Number of wild Ducks: It is dark-coloured, and flies heavily; but, when it has a mind to come hastily away from a Place, the Bird sustains itself upon the Ends of its Wings and Feet, and, in this manner, runs lightly and swiftly upon the Surface of the Water: This Bird feeds upon Insects, Sea-weeds, and Fish: Its Flesh is hard, and like Leather, especially when it is old; and, therefore, it should not be eaten but when young: This same Flesh tastes, also, of Fish; and the *Roman Catholics* allow the Use of it in *Lent*.

PUGILLUS. A Pugil. The eighth Part of an Handful.

PULEGIUM.

The Characters are;

The Flowers, which are very small, are disposed in close thick Whorles, and their upper Lip is entire: In other respects this Herb resembles the *Mentha*, or Mint.

Boerhaave mentions four Sorts of Pulegium; which are,

1. Pulegium; latifolium. *C. B. P. 222. Boerb. Ind. alt. 186. Pulegium. Offic. J. B. 3. 256. Raii Hist. 1. 533. Synop. 3. 235. Pulegium regium. Ger. 545. Emac. 671. Pulegium vulgare. Park. Theat. 29. Mentha aquatica seu Pulegium vulgare. Tourn. Inst. 189. PENYROIAL.*

Penyroial has many creeping fibrous Roots; from which spring a great many smooth roundish Stalks, hardly able to support themselves, but leaning on the Ground, and sending out small Fibres, by which it roots itself in the Ground: It bears two small, round, but yet pointed Leaves, at a Joint: The Flowers grow towards the upper Part of the Branches, coming forth just above the Leaves, in thick close Whorles; they are of a pale-purple Colour, small and galeated, set in small, somewhat downy Calyces, in which grow four small Seeds. The whole Plant has a very strong Smell, and an hot aromatic Taste: It grows frequently upon moist Commons, and in Places where Water has stood all Winter, and flowers in *July*. But what we use in the Shops is generally cultivated in

in Gardens, where it grows tall and large: The whole Herb is used.

It is hot and dry, of very subtil volatile Parts, and is peculiarly appropriated to the Female Sex, being a good Uterine, provoking the Menfes and Lochia, expelling the Birth and Secundines: It, likewise, warms and comforts the Bowels, and helps the Colic and Jaundice, and is good against Coughs and Shortness of Breath: The Juice, or a strong Decoction of the Leaves, sweetened with Sugar, has been accounted a Specific against a whooping Cough.

Official Preparations are only the distilled Water and Oil. *Miller's Bot. Off.*

This Plant, which is very bitter, acrid, and of a very penetrating Smell, gives a deep Tincture of Red to the blue Paper; so that it is probable, it contains a volatile, aromatic, and oily Salt, loaded with Acid; whereas, in the artificial, volatile, oily Salt, this Acid is detained by the Salt of Tartar.

Thus this Plant is aperitive, hysteric, and good for the Diseases of the Stomach and Breast; since it evacuates those glutinous Sordes, which fill part of the Bronchia, and Vesicles of the Lungs; especially if it is boiled with Honey and Aloes; for then (as *Dioscorides* observes) it purges, and procures Expectoration. *Tragus* very much commends the Decoction of Penyroyal in White-wine, for the Suppression of the Menfes, and Fluor Albus. The Juice of this Plant, according to the same Author, clears the Sight, and removes Lippitude. *Montanus* prescribed the Powder of Penyroyal, mixed with equal Quantities of Vinegar, Honey, and Water, for the Diseases of the Eyes. The Conserve of its Flowers and Leaves is good for the Dropsy and Jaundice. *Ray* affirms, from Mr. *Boyle*, that a Spoonful of the Juice of Penyroyal is a good Remedy for the Chin-cough of Children. *Chefneau* prescribes a Glass of its Decoction for Hoarseness; and advises to take it before going to Bed. *Martyn's Tournefort*.

2. *Pulegium*; angustifolium. *Ger.* 546. *Emac.* 672. *Raii Hist.* 1. 534. *C. B. P.* 222. *Boerb. Ind.* alt. 186. *Pulegium cervinum*. *Offic.* *Pulegium angustifolium sive Cervinum*. *Park. Theat.* 30. *Pulegium cervinum angustifolium*. *J. B.* 3. 257. *Mentha aquatica Satureiæ folio*. *Tourn. Inst.* 190. **HART PENYROYAL.**

This grows more erect than the common Penyroyal, with much longer and narrower Leaves, somewhat like Savory; the Flowers grow in thick Whorles, like the former, and the Smell is much alike; but this is rather pleasanter. It grows in *Provence* and *Languedoc* in *France*, and in divers Parts of *Italy*.

It has the same Virtues with the common Penyroyal, and is, by the Physicians about *Montpellier*, preferred before it; but is seldom or never prescribed here, or brought into our Shops. *Miller's Bot. Off.*

3. *Pulegium*; angustifolium; flore albo. *H. R. Par. Mentha, aquatica, Satureiæ folio, flore albo*. *T.* 190.

4. *Pulegium*; latifolium; hirsutum; flore cæruleo. *Boerb. Ind. alt. Plant. Vol.* 1.

Besides the foregoing Species of *Pulegium*, *Dale* mentions the following;

PULEGIUM ERECTUM. *Offic. An.* *Pulegium latifolium alterum*. *C. B. P.* 222. **UPRIGHT PENYROYAL.**

This Plant grows in marshy Places: The Herb itself is used, and in Virtues agrees with the common Penyroyal. *Dale*.

PULEX. A Flea.

PULICARIA. A Name for the **PSYLLIUM**.

PULMO. The Lungs.

The Lungs are two large spongy Bodies, of a redish Colour in Children, greyish in adult Persons, and bluish in Old-age, filling the whole Cavity of the Thorax; one being seated in the Right Side, the other in the Left, parted by the Mediastinum and Heart, and of a Figure answering to that of the Cavity which contains them, that is, convex next the Ribs, concave next the Diaphragm, and irregularly flatted and depressed next the Mediastinum and Heart.

When the Lungs are viewed out of the Thorax, they represent, in some measure, an Ox's Foot, with the fore Part turned to the Back, the back Part to the Sternum, and the lower Part to the Diaphragm.

They are distinguished into the Right and Left Lung; and each of these into two or three Portions, called *Lobi*; of which the Right Lung has commonly three, or two and an half, and the Left Lung two. The Right Lung is generally larger than the Left, answerably to that Cavity of the Breast, and to the Obliquity of the Mediastinum.

At the lower Edge of the Left Lung, there is an indented Notch, or Sinus, opposite to the Apex of the Heart, which is, therefore, never covered by that Lung, even in the strongest Inspirations; and, consequently, the Apex of the Heart and Pericardium may always strike against the Ribs; the Lungs not surrounding the Heart in the manner commonly taught. This Sinus is expelled in *Eustachius's* Tables.

The Substance of the Lungs is almost all spongy, being made up of an infinite Number of membranous Cells, and of different Sorts of Vessels, spread among the Cells, in innumerable Ramifications.

This whole Mass is covered by a Membrane, continued from each Pleura, which is commonly said to be double; but what is looked upon as the inner Membrane, is only an Expansion and Continuation of a cellular Substance.

BRONCHIA.

The Vessels which compose part of the Substance of the Lungs, are of three or four Kinds; the Air-vessels, Blood-vessels, and Lymphatics: To which we may add the Nerves. The Air-vessels make the principal Part, and are termed *Bronchia*.

These Bronchia are conical Tubes, composed of an infinite Number of cartilaginous Fragments, like so many irregular Arches of Circles, connected together by a ligamentary elastic Membrane; and disposed in such a manner, as that the lower easily insinuate themselves within those above them.

They are lined on the Inside by a very fine Membrane, which continually discharges a mucilaginous Fluid; and in the Substance of the Membrane are a great Number of small Blood-vessels, and, on its convex Side, many longitudinal Lines, which appear to be partly fleshy, and partly made up of an elastic Substance of another Kind.

The Bronchia are divided in all Directions into an infinite Number of Ramifications, which diminish gradually in Size; and, as they become capillary, change their cartilaginous Structure into that of a Membrane. Besides these very small Extremities of this numerous Series of Ramifications, we find, that all the subordinate Trunks, from the greatest to the smallest, send out, from all Sides, a vast Number of short capillary Tubes, of the same kind.

VESICULÆ BRONCHIALES.

Each of these numerous Bronchial Tubes is widened at the Extremity, and thereby formed into a small membranous Cell, commonly called a *Vesicle*: These Cells, or Folliculi, are closely connected together in Bundles; each small Branch producing a Bundle proportionable to its Extent, and the Number of its Ramifications.

These small vesicular, or cellulous Bundles, are termed Lobules; and as the great Branches are divided into small Ramifications, so the great Lobules are divided into several small ones. The Cells, or Vesicles, of each Lobule have a free Communication with each other; but the several Lobules do not communicate so readily.

The Lobules appear distinctly to be parted by another cellulous Substance, which surrounds each of them, in proportion to their Extent, and fills up the Interstices between them. This Substance forms, likewise, a kind of irregular, membranous Cells, which are thinner, looser, and broader, than the Bronchial Vesicles.

This Substance is dispersed through every Part of the Lungs; forms cellulous, or spongy Vaginae, which surround the Ramifications of the Bronchia and Blood-vessels; and is afterwards spread over the outer Surface of each Lung, where it forms a kind of fine, cellular Coat, joined to the general Covering of that Viscus.

When we blow into this interlobular Substance, the Air compresses and flattens the Lobuli; and, when we blow into the Bronchial Vesicles, they presently swell; and, if we continue to blow with Force, the Air passes, insensibly, into the interlobular Substance. We owe this Observation to M. *Helvetius*.

All the Bronchial Cells are surrounded by a very fine reticular Texture of the small Extremities of Arteries and Veins, which communicate, every Way, with each other. The greatest Part of this admirable Structure is the Discovery of the illustrious *Malpighi*.

BLOOD-VESSELS.

The Blood-vessels of the Lungs are of two Kinds; one common, called the Pulmonary Arteries and Veins; the other proper, called the Bronchial Arteries and Veins.

The Pulmonary Artery goes out from the Right Ventricle of the Heart; and its Trunk, having run almost directly upward, as high as the Curvature of the Aorta, is divided into two lateral Branches, one going to the Right Hand, called the Right Pulmonary Artery; the other to the Left, termed the Left Pulmonary Artery. The Right Artery passes under the Curvature of the Aorta, and is, consequently, longer than the Left. They both run to the Lungs, and are dispersed through their whole Substance, by Ramifications nearly like those of the Bronchia, and lying in the same Directions.

The Pulmonary Veins, having been distributed through the Lungs, in the same manner, go out, on each Side, by two great Branches,

Branches, which open laterally into the Reservoir, or muscular Bag, of the Right Auricle.

The Ramifications of these two Kinds of Vessels in the Lungs are surrounded, every-where, by the cellular Substance already mentioned, which, likewise, gives them a kind of Vagina; and the Rete mirabile of *Malpighi*, described above, is formed by the capillary Extremities of these Vessels. It must be observed, that the Ramifications of the Arteries are more numerous, and larger, than those of the Veins, which, in all other Parts of the Body, exceed the Arteries, both in Number, and Size.

Besides these capital Blood-vessels, there are two others, called the bronchial Artery and Vein; the Artery has become very famous, of late, by the Description given of it by *M. Ruysch*. The Vein was doubted of, for some time; but it exists as really as the Artery, and may be easily demonstrated.

These two Vessels are very small, appearing only like very fine Arteries and Veins coming from the Aorta, Vena Cava, and their Branches; and they seem to have no other Use, but that of nourishing the Lungs.

The Varieties in the Origins of the bronchial Arteries and Veins, especially of the Arteries, their Communications, or Anastomoses, with each other, and with the neighbouring Vessels, and, above all, the immediate Anastomosis of the bronchial Artery with the common pulmonary Vein, are of great Consequence, in the Practice of Physic.

The bronchial Arteries come sometimes from the anterior Part of the Aorta descendens superior, sometimes from the first intercostal Artery, and sometimes from one of the Oesophagæ. They go out, sometimes, separately, towards each Lung; sometimes by a small common Trunk, which afterwards divides to the Right and Left, near the Bifurcation of the Aspera Arteria; and follow Ramifications of the Bronchia.

The Left bronchial Artery comes often from the Aorta, and the Right from the superior Intercostal, on the same Side, because of the Situation of the Aorta: There is, likewise, another, which arises from the Aorta posteriorly, near the superior Intercostal, and above the anterior Bronchialis.

The bronchial Artery gives off a small Branch to the Auricle of the Heart, on the same Side, which communicates immediately with the coronary Artery.

In the Year 1719, I observed a very plain Anastomosis between some Branches of the Left pulmonary Vein, and of one of the Arteriæ Oesophagæ, which came from the first Left Intercostalis, together with a bronchial Artery of the same Side.

In that, or the following Year, I likewise observed an Anastomosis between the Left bronchial Artery, and the Vena Azygos; and in April 1721, I saw an Anastomosis between a Branch of this Artery, and the Body of the just-mentioned Vein.

Sometimes one bronchial Artery gives Origin to several superior Intercostals, and sometimes several bronchial Arteries send off separately the same Number of Intercostals. The bronchial Veins, as well as Arteries, were known to *Galen*; these Veins are sometimes Branches of the Azygos, coming from the upper Part of the Curvature, or Arch. The Left Vein is sometimes a Branch of the common Trunk of the Intercost of the same Side; and sometimes both Veins are Branches of the Cyturalis.

NERVES.

The Lungs have a great many Nerves distributed through them, by Filaments which accompany the Ramifications of the Bronchia and Blood-vessels, and are spread on the Cells, Coats, and all the membranous Parts of the Lungs. The Nervi Sympathetici medii, and majores, commonly called Nerves of the eighth Pair, or the Intercostals, form, behind each Lung, a particular Intertexture, called Plexus pulmonaris, from whence nervous Filaments go out, which communicate with the Plexus Cardiacus and Stomachicus.

LYMPHATIC VESSELS.

On the Surface of the human Lungs, between the external and cellular Coat, we observe something that looks like lymphatic Vessels; but we ought to take care not to mistake, for such Vessels, a transparent reticular Substance, observable on the Surface of the Lungs, after blowing strongly into the Lobuli; this Appearance being entirely owing to the Air which passes through the bronchial Vesicles into the Interlobular Cells, and which, by separating a certain Number of Lobuli, finds Room to lodge between them. The true lymphatic Vessels of the Lungs are most visible in Brutes; and in an Horse, particularly, I have observed one of these Vessels to run along a great Part of one Edge of the Lungs.

LIGAMENTS.

Under the Root of each Lung, that is, under that Part form'd by the subordinate Trunk of the pulmonary Artery, by the Trunks

of the pulmonary Veins, and by the Trunk of the Bronchia, there is a pretty broad membranous Ligament, which ties the posterior Edge of each Lung to the lateral Parts of the Vertebrae of the Back, from that Root all the Way to the Diaphragm.

TRACHEA, OR ASPERA ARTERIA.

The Bronchia, already described, are Branches or Ramifications of a large Canal, partly cartilaginous, and partly membranous, called Trachea, or Aspera Arteria. It is situated anteriorly, in the lower Part of the Neck, from whence it runs down into the Thorax, between the two Pleurae, through the upper Space left between the Duplication of the Mediastinum, behind the Thymus.

Having reached as low as the Curvature of the Aorta, it divides into two lateral Parts, one towards the Right-hand, the other towards the Left, which enter the Lungs, and are distributed through them in the manner already said. These two Branches are called Bronchia, and that on the Right Side is shorter than that on the Left; whereas the Right pulmonary Artery is the longest.

The Trachea is made up of Segments of Circles, or cartilaginous Hoops, disposed in such a manner, as to form a Canal open on the back Part, the Cartilages not going quite round; but this Opening is filled by a soft glandular Membrane, which completes the Circumference of the Canal.

Each Circle is about the twelfth Part of an Inch in Breadth, and about a Quarter of that Space in Thickness; their Extremities are round, and they are situated horizontally above each other, small Interstices being left between them, and the lower Edge of the superior Segments being turned toward the upper Edge of those next below them.

They are all connected by a very strong elastic membranous Ligament, fixed to their Edges. I have observed the first three Segments united into one, bent alternately in two different Places, according to its Breadth: Sometimes two are continuous in the same Manner.

The Canal of the Aspera Arteria is lined on the Inside by a particular Membrane, which appears to be partly fleshy, or muscular, and partly ligamentary, perforated by an infinite Number of small Holes, more or less imperceptible, through which a mucilaginous Fluid continually passes, to defend the inner Surface of the Trachea against the Acrimony of the Air which we breathe.

This Fluid comes from small glandular Bodies, dispersed through the Substance of the Membrane, but especially from Glands something larger than the former, which lie on the outer or posterior Surface of that strong Membrane, by which the Circumference of the Canal is completed. The same Structure is observable in the Ramifications of the Trachea, from the greatest to the smallest.

All the Vessels of which the Lungs are principally composed, that is, the Air-vessels, or Bronchia; and Blood-vessels, that is, the pulmonary and bronchial Arteries and Veins; accompany each other through this whole Viscus.

They are disposed, commonly, in such a manner, even to the last Ramifications, as that a subordinate Trunk or Branch of the Bronchia lies between the like Trunks or Branches of the pulmonary Artery and Vein; the bronchial Vessels being immediately joined to the Bronchia. In some Places these three Kinds of Vessels touch each other, in such a manner, as to leave a triangular Space in the Middle.

The Bronchia are divided into a very great Number of Ramifications, and the last Branches are the Pedicles or Foot-stalks of the small Lobuli. All the Lobuli are angular, oblong, broad, and thin; the Foot-stalks send out other small membranous Pedicles, which are very short, and terminate in the bronchial Vesicles, or Cells, of which they are Continuations. The subordinate Trunks and Ramifications detach a great Number of these Pedicles from their convex Surface.

When we blow into the Lungs, the bronchial Cells, nearest their outer Surface, appear like small Portions of round Vesicles; and, from this Appearance, all the bronchial Cells have got the Name of Vesicles, though they are all angular, except those which I have now mentioned.

When we examine a Lung, without blowing it up, we find, that the cartilaginous Segments of the Bronchia lie so near, as to be engaged in each other; and, in drawing out any Portion of the Bronchia by the two Ends, these Segments are parted, and the whole Canal is increased in Length; but it contracts again, by means of its elastic Membrane, as soon as that Force is taken off.

When we open, lengthwise, any Portion of the pulmonary Artery and Vein, in the same Lung, we meet with a great Number of transverse Rugæ, which are destroyed when these Vessels are elongated: This is an Observation made by *Hilvatius*.

By virtue of this Structure, all the Ramifications, both of the Bronchia, and pulmonary Arteries and Veins, have constantly the same Direction, whether the Lung be inflated, or collapsed; and they contract in Length, without being either contorted, or folded. In Expiration, these Vessels are elongated, and shortened in Inspiration.

These three Vessels lie in a sort of cellular Vagina, which accompanies all their Ramifications, and is a Continuation of the interlobular Cells, or cellular Substance in the Interstices of the Lobuli. The Pelliculæ which compose it, are, however, disposed there, in a more regular manner, and more longitudinally, than in other Places; and thereby appear to form a true Vagina.

When we blow through a Pipe, introduced so far as to touch immediately a Trunk of the Blood-vessels, or Bronchia, the Air runs, at first, through all the Cells that lie nearest that Trunk, or its Branches; but if we continue to blow, it insinuates itself through the whole interlobular Substance.

BRONCHIAL GLANDS.

At the Angle of the first Ramification of the Trachea Arteria, we find, on both the fore and back Sides, certain soft, roundish, glandular Bodies, of a bluish, or blackish Colour, and of a Texture partly like that of the Thymus, and partly like that of the Glandulæ Thyroides. There are other Glands, of the same Kind, at the Origin of each Ramification of the Bronchia; but they decrease proportionably, in Number and Size: They are fixed immediately to the Bronchia, and covered by the interlobular Substance; and they seem to communicate, by small Openings, with the Cavity of the Bronchia.

The Trachea has several Coats; the outermost, or common, Covering surrounds that Part of the Trachea which lies in the Thorax; but out of the Thorax, this first Coat is derived from the aponeurotic Expansions of the Muscles of the Neck; and it is between this, and the following Covering, that the Glands, already mentioned, are situated.

The second is a proper Coat, being a Continuation of the cellular Covering of the Lungs; and the Pellicles thereof, nearest the cartilaginous Segments, serve them for an external Perichondrium. The third Membrane lies on the Inside, adhering closely to the same Cartilages, and supplying, to these, the Place of an internal Perichondrium.

The fourth Membrane is that which completes the Circumference of the cartilaginous Circles of the Trachea: It consists, principally, of two Laminae, or Strata, partly muscular, and partly tendinous; the external, or posterior, Lamina being made up of longitudinal Fibres; and the internal, or anterior, of transverse Fibres. This Membrane is perforated by the small Duets of the above-mentioned Glands, which discharge a Fluid, when pressed; and, being examined through a Microscope, they appear vesicular, or folliculous, much like those of the Stomach.

The Ligaments between the cartilaginous Circles are very strong, and elastic; and each of them is confined to two Cartilages, without communicating with any of the rest; being fixed to the Edges of these Cartilages, much in the same manner as the intercostal Muscles are inserted in the Ribs.

As the Bronchia penetrate into the Substance of the Lungs, they gradually lose their Cartilages; but the muscular Lines, or Columnæ, of Morgagni appear as much, and sometimes more than before. The two Planes above-mentioned continue, likewise, to be visible; and we observe very distinctly, sometimes, even without a Microscope, a great many small Holes in the Pedicles of the Lobuli, and bronchial Vesicles, or Cells, which open from within outwards.

USES.

Respiration is performed by Organs of two Kinds, one of which may be looked upon as active, the other as passive. The Lungs are of the second Kind; and the first comprehends, principally, the Diaphragm, and intercostal Muscles.

As soon as the intercostal Muscles begin to contract, the Arches of the Ribs are raised, together with the Sternum, and placed at a greater Distance from each other; by which means, the Cavity of the Thorax is enlarged on the two lateral and anterior Sides.

At the same Instant, the Diaphragm is flatted, or brought toward a Plane, by two Motions, which are, apparently, contrary; that is, by the Contraction of the Diaphragm, and the Dilatation of the Ribs, in which it is inserted. The external Surface of the Thorax being thus, in a manner, increased, and the Cavity of the Bronchia being, at the same time, and by the same means, less resisted, or pressed upon, the ambient Air yields to the external Pressure, and insinuates itself into all the Places where the Pressure is diminished; that is, into the Aspera Arteria, and into all the Ramifications of the Bronchia, all the Way to the Vesicles. This is what is called Inspiration.

This Motion of Inspiration is instantaneous, and ceases in a Moment, by the Relaxation of the intercostal Muscles; the elastic Ligaments, and Cartilages of the Ribs, bringing them back, at the same time, to their former Situation. This Motion, by which the Ribs are depressed, and brought nearer each other, is termed Expiration.

The pulmonary Arteries and Veins, which accompany the Bronchia through all their Ramifications, and surround the Vesicles, transmit the Blood through their narrow capillary Extremities, and thereby change or modify it, at least, in three different Manners.

The first Change, or Modification, which the Blood undergoes in the Lungs, is to have the Cohesion of its Parts broken, to be attenuated, pounded, and, as it were, reduced to Powder. The second is, to be deprived of a certain Quantity of Serum, which transpires through the Lungs, and is what we commonly call the Breath. The third is to be, in a manner, re-animated, by the Impression of the Air, whether the whole Body of the Air enters the Blood, whether the common Air is only the Vehicle of some finer Parts which are conveyed to it, or whether the Air only compresses, or shakes the Blood, as it passes round the bronchial Vesicles in the reticular capillary Extremities of the Vessels.

The Cartilages of the Aspera Arteria, and Bronchia, serve, in general, to compose a Canal, the Sides of which will not sink in, or subside, by Compression, but will, nevertheless, yield to certain Pressures and Impulses, without breaking. As these Cartilages are not complete Circles, or Rings, and as their Circumferences are completed by elastic Membranes, they allow of these Dilatations and Contractions, which modulate the Voice; and as they are connected by elastic Ligaments, of a considerable Breadth, the alternate Elongation and Contraction of the Bronchia is facilitated, in the Motions of Respiration. *Winflow's Anatomy.*

PULMO MARINUS. *Offic. Aldrov. Exang. 577. C. B. P. 369. Jons. Exang. 56. Bellon. Aquat. 438. Gesn. Aquat. 760. Rondel. Aquat. 2. 131. Charlt. Exer. 68. SEA LUNGS.*

This Substance floats in the Sea; is of a pellucid bluish Colour, resembling, in some measure, that of Crystal; and is so tender, that it can hardly be taken out of the Sea entire. When recently triturated, and used by way of Ointment, it cures Gouts and Chilblains. *Dioscor. Dale.*

This Substance, according to Lemery, in his *Traité des Drogues*, contains a large Quantity of Oil, and of Salts, both of the volatile, and fixed Kind. It removes the Hairs, when applied to any Part covered with them. A Lixivium, prepared of calcined Sea Lungs, with a large Quantity of Water, if drank, is proper to dissolve the Stone, excite the Menfes, and provoke Urine.

PULMONARIA.

The Characters are;

The Calyx is like a Tube, pentagonal, and quinquesid. The Flower is monopetalous, cylindrical in its lower Part, and shaped like a Bason above, with its Margin cut into five round Segments. From the Sides of the internal cylindrical Part, which are neatly fimbriated, arise five Stamina.

Berberhaave mentions six Species of *Pulmonaria*; which are, 1. *Pulmonaria, vulgaris; latifolia; flore albo. T. 136. Boerb. Ind. A. 193. Pulmonaria maculosa. Offic. Ger. 662. Emac. 808. Raii Hist. 1. 488. Park. Parad. 448. Pulmonaria Italorum ad Buglossum accedens. J. B. 3. 595. Symphytum maculosum five Pulmonaria latifolia. C. B. P. 259. SAGE OF JERUSALEM.*

The lower Leaves of this Plant are large and oval, five or six Inches long, growing on broad Foot-stalks, thick-set with fine Hairs, of a deep Green above, and spotted with white Spots; but of a paler Green, and unspotted, underneath. The Stalks rise to be near a Foot high, having several smaller Leaves on them; and on their Tops grow several Flowers together, each in a long hairy Calyx, having their Brims appearing but a little above it, of a redish Colour, being single, and Cup-fashion, cut at the End into five round Segments; and are each succeeded by four rough Seeds, growing in the Bottom of the Calyx. The Root is small and fibrous. It is planted in Gardens, and flowers in May; the Leaves are used.

This is accounted a pectoral, balsamic Plant, and good for Coughs, Consumptions, Spitting of Blood, and the like Disorders of the Lungs: It is, likewise, put into Wound-drinks, and traumatic Decoctions; being agglutinating, and good to heal Wounds and Ulcers, and old Sores. *Miller's Bot. Off.*

The *Pulmonaria* has a saltish, herby, glutinous Taste, and reddens the blue Paper pretty much; it is very sweetening. It is used in Ptisans, and Broths made of Calves Lungs, for the Difficulties of the Breast, when the Spittle is salt, or purulent. *Martyn's Tournefort.*

2. *Pulmonaria; Alpina; foliis mollibus, subrotundis; flore cœruleo. T. 136. Symphytum maculosum. Dod. p. 135.*

3. Pul-

3. *Pulmonaria*; foliis Echii. *Ger.* 662. *Emac.* 808. *Raii Hist.* 1. 489. *Synop.* 3. 226. *Tourn. Inst.* 136. *Boerb. Ind. A.* 193. *Pulmonaria angustifolia rubente cœruleo flore.* C. B. P. 260. *Pulmonaria angustifolia.* Park. Parad. 248. *Pulmonaria rubro flore, foliis Echii.* J. B. 3. 597. *Symphytum maculosum seu Pulmonaria maxima, foliis quasi Saccharo incrustatis.* Raii Hist. 3. 266. NARROW-LEAVED SAGE OF BETH-LEHEM.

This Plant is cultivated in Gardens, and flowers in May. Its Leaves are only used, and, in Virtues, agree with those of the Sage of Jerusalem. Dale.

4. *Pulmonaria*; folio non maculoso. *Clus. H.* 169. *Symphytum, minus, non maculatum, Germanicum, angustifolium, floribus à rubentibus cœruleis.* M. H. 3. 444.

5. *Pulmonaria*; major; non maculosa. *J. B.* 3. 493.

6. *Pulmonaria*; Orientalis; calyce vesicario; foliis Echii; flore purpureo, infundibuliformi. *T. Cor.* 6. *Boerb. Ind. alt. Plant. Vol.* 1.

This Plant contains a mild, benign Juice; but is no more efficacious in Disorders of the Lungs, than Borage, or Hound-tongue, since it is equally proper in all Disorders where Medicines of a demulcent, emollient, and relaxing Quality, are indicated.

It is, like Mallows, of an emollient, conglutinating, consolidating, moistening, and inspissating Quality. The Flowers or Leaves are recommended in a Spitting of Blood, an Hætic, and a Phthisis. It is classed among the vulnerary Plants, and accounted highly beneficial in Hoarseness, and long-continued Coughs. Hence it is proper in a Pleurisy, a Peripneumony, and Hepatides, where Expectoration is required. It procures a free Breathing, and is beneficial to the Kidneys. *Hist. Plant. adscript. Boerb.*

PULMONIA. The same as PERIPNEUMONIA.

PULPA. The Pulp of Fruits.

PULPEZIA. An Apoplexy.

PULS. The same as ERNOS.

PULSATILLA.

The Characters are;

The Root is fibrous and perennial; the Leaves are jagged, and surround the Stalk like a Crown, as in the *Anemonoides*, and *Anemone*. The Apex of the Stalk is expanded into a Placenta, whose Base has its Bottom surrounded with a naked, hexapetalous Flower, furnished with very numerous Stamina, which arise from the Bottom of the Placenta within the Petals. The Ovary becomes a little globous Head, to which grow Numbers of little hairy Husks, furnished with a long hairy Sheath, ending in a sort of long slender Capillament, like a plumous Tail.

Boerhaave mentions two Species of *Pulsatilla*; which are,

1. *Pulsatilla*; folio crassiore; & majore flore. C. B. P. 177. *Tourn. Inst.* 284. *Raii Synop.* 3. 260. *Boerb. Ind. A.* 39. *Pulsatilla.* Offic. *Pulsatilla vulgaris.* *Ger.* 314. *Emac.* 385. *Park. Theat.* 341. *Raii Hist.* 1. 633. *Pulsatilla Anglica purpurea.* *Park. Parad.* 199. *Pulsatilla purpurea cœruleave.* J. B. 3. 409. PASQUE-FLOWER.

This Plant is so acrid, that the mere Vapour of its Leaves, rubbed between the Fingers, seems to burn the Nose, and penetrate to the very Brain: It might be made use of in the Lethargy; the Leaves bruised are applied to Ulcers, but especially to the Wounds of Horses.

By the chymical Analysis this Plant yields some Marks of Acidity, a great deal of Sulphur and Earth, and a little fixt, and no volatile concrete Salt. *Martyn's Tournesfort.*

2. *Pulsatilla*; flore minore; nigricante. C. B. P. 177. *Boerb. Ind. alt. Plant.*

PULSATIO. Pulsation; that is, a morbid Sensation of something beating in any Part. Hence a sort of Pain, attended with this sort of Sensation, is called a pulsatory Pain.

PULSILOGIUM. A Pulse-watch, or Instrument to measure the Celerity of the Pulse. *Sanctorius* is said to be the first Inventor of this Machine; and Sir John Floyer has wrote a Treatise expressly upon this Subject.

PULSUS.

No Doctrine has been involved in more Difficulties than that of Pulses; since, in giving a physiological Account of them, Physicians have espoused quite opposite Sentiments; whilst some doubt whether the Pulse is owing to the Systole, or the Diastole; as, also, whether the Motion of the Heart and Arteries is one and the same for a Moment of Time: Others, especially among the Antients, mention an incredible Number of different Pulses, most of which can neither be felt by the Touch, nor comprehended by the Mind. Others run into the opposite Error, and will only admit of two or three different Kinds of Pulses. Others take different Kinds of Pulses for one and the same Species, whilst others assert, that their Distinction is absolutely necessary, to prevent Confusion and Blunders in Practice. Thus many of the Moderns affirm a quick and frequent Pulse to be the same; whilst others maintain, that the Distinction between

them is of the last Importance in Practice. A vehement, strong, large, and quick Pulse, are now-and-then said to be of the same Species; whilst others will have them to be entirely distinct: And, indeed, if we consult Experience, we shall hardly ever find two Physicians agreeing in their Appellations of the Patient's Pulse. The Opinions of the Learned are no less various, with respect to the Use of the Doctrine of the Pulses in Practice; whilst some assert, that they are highly fallacious Signs in most Disorders, and can only be of Use in some Fevers; whilst others assert the Knowledge of Pulses so necessary to a practical Physician, that he cannot, without it, form a certain Prognostic; especially with respect to latent Diseases; for which Reason, they, with the *Chinese*, greatly esteem the Knowledge of the Pulses; and maintain, that they ought to be, for a long time, accurately explored, in various Parts of the Body. But, in all Probability, the Origin of those Differences is, that the Antients were ignorant of the Circulation of the Blood, and invented different Species of Pulses, from the speculative and abstracted Differences of any solid Body, at different Times, variously impelled. But as the Moderns have rarely applied the Doctrine of the Circulation of the Blood to Pathology and Practice, so they have rested contented with the Rules of the Antients, with respect to Pulses, without attempting a just Account of their Nature and Differences, from the Discovery of the Circulation of the Fluids. But, to lay a Foundation for Certainty in this Point, and prevent future Mistakes, I shall, from the Laws of Mechanics, and especially from the Circulation of the Blood, shew the Nature, Differences, and practical Use of Pulses.

But, before we proceed to this, we shall, for the sake of Accuracy and Connection, give the Physiology, or natural Constitution, of the Pulse; that the Truths connected with it may be the better discovered and explained. But here a Controversy occurs; which is, Whether the Motion of the Heart be the same with the Pulse; or whether, at the same time the Heart is in its Systole, the Arteries are so too, and the Systole of the Heart and Arteries is the true Pulse; or, rather, whether the Systole of the Heart, and Diastole of the Arteries, are not reciprocal; or whether, when the Heart is in its Systole, the Arteries are in their Diastole; and whether the Pulse is not the Systole, but, rather, the Diastole, of the Arteries. *Sennertus*, in his *Institut. Lib. 3. Part 1. Sect. 4. Cap. 1.* embraces the former of these Opinions; and informs us, that the Heart and Arteries are dilated, and contracted, at one and the same time; and that it is rash, not to acquiesce in the Evidence of Sense. He seems, indeed, in the Part now quoted, to oppose his own Opinion, by a Doubt conveyed to his Reader, in the following manner: "If, at the same time in which the Heart is contracted, and expels its Contents, the Arteries were also contracted; it would follow, that the Arteries could not receive the Blood; and, on the contrary, that at the time the Heart and Arteries are at once dilated, the Heart could not receive the Blood from the Arteries; because these mutual Attractions would hinder each other." Yet he answers this Doubt, in the following manner, by telling us, "That no Disadvantage arises from this, since the Arteries are not so compressed, and shut up, as that they are absolutely capable of receiving nothing; but still retain a sufficient Cavity for receiving that which is transmitted by the Heart; as, also, that the Heart receives Blood from the Lungs; and that the Arteries not only receive Blood from the Heart, but, also, from the adjacent Parts, and the Veins, in their Dilatation." But 'tis easy to perceive, that this Doctrine is entirely inconsistent with the justest Notions of the Circulation of the Blood; of which *Sennertus* was ignorant.

But it is surprising, that some, sufficiently acquainted with the Circulation of the Blood, should tread in the Steps of *Sennertus*, and assert, that the Motion of the Heart, in its Systole, is the same with the Motion of the Arteries perceived in the Pulse; and that the Systole of the Heart, by way of Eminence, denotes the Pulse: By this means, they pretend to refute those who assert, that the Motion of the Heart and Arteries is not the same, but alternate. It is, also, surprising, that so great Men as *Galen*, and *Johannes Baptista Montanus*, in *Lib. 1. de Pulsibus dignosc.* Cap. 5. should affirm, that the Systole, or Contraction of the Pulse cannot be perceived; but even reject the Opinion of those who believe, that when the Pulse vibrates, the Artery is in its Diastole. But we assert, with almost all the Moderns, that the Pulse is nothing but the Dilatation or Expansion of the Arteries by the Blood, protruded, by the Contraction of the Heart, from its Left Ventricle, into the Arteries, which are stretched and dilated by the Impulse of the Blood coming from the Heart, and communicated to the whole Fluids; then, after their Dilatation, they not only recoil, and are restored to their former Figure, but are, also, in some measure, farther contracted, and, with a new Impulse, propel the Blood more into the minute Arteries and Origins of the Veins: For, according to *Bellini*, in

in *Tract. de Pulsibus*, the Arteries have a double Motion, the one a Dilatation, or the Impressions they make on the Finger; and the other a Contraction, or receding from the Finger; which, according to *Galen*, is not to be perceived without great Difficulty: For the Circulation of the Blood, on which Life depends, is carried on, without Intermission, by the reciprocal Motions of the Heart and Arteries: Nor, without these, can the Motion of the human Fluids be accounted for. When, therefore, the Heart is in its Systole, and expels its Contents, the Arteries are in their Diastole, and receive them. So, also, when the Arteries, in consequence of the large Number of spiral and muscular Fibres, of which they consist, contract themselves, the Veins and Heart are in their Diastole, and receive the Blood from the Arteries. *Galen* entertained the same Opinion, which excellently quadrates with the Circulation of the Blood. For, in *Lib. 7. Anatom. administr.* he tells us, *That the Pulsation of the Heart and Arteries is such, that when the Heart is filled, the Arteries are emptied; and when the Heart is emptied, the Arteries are filled.* *Fernelius* is, also, of the same Opinion: For, says he, *the Pulse consists of a Systole and Diastole; the latter is a Dilatation or Expansion of the Artery every Way; whereas the former is a Contraction or Subsiding of it in every Dimension.*

With respect to Pulses, there is no small Difference of Opinions and Sentiments; for almost all the Antients maintained, that all the Species of them were distinct, and different from each other; whereas some of the Moderns take the quick, and the frequent, Pulse for one and the same, as is sufficiently obvious from their Works. Others, fond of being thought uncommonly wise, dissent from them; and affirm, that there is so great a Distinction between them, that a practical Physician would look upon the Man as a Fool, who should give them out for the same Pulse. But, in order to get clear of all Doubts and Difficulties, we shall more accurately investigate this Matter. The Antients, then, were unanimously of Opinion, that since the Pulse was a local Motion, whatever was requisite to the latter, or could be affirmed or denied of it, was, of course, applicable to the former. Now, according to *Galen* and *Sennertus*, five Things are requisite to local Motion: First, a moving Cause. Secondly, the Space through which the Body is moved. Thirdly, the Time consumed during the Motion. Fourthly, Rest, when Bodies, moving in opposite Directions, meet. And, fifthly, the Instrument by which the Motion is performed. From these they deduce the simple Differences of Pulses. Upon the moving Cause depend Vehemence and Weakness; hence a vehement, or weak, Pulse are produced. On the Space or Quantity of the Distention, or Dilatation, depend the Greatness and Smallness of the Pulse. On the Time in which the Artery performs its Motion, depend the Quickness and Slowness of the Pulse. According as the Artery remains long or short in a State of Rest, the Pulse is said to be frequent, or rare. And from the Organ of the Pulse, which is the Artery, and which is sometimes harder, and sometimes softer, arises a soft and hard Pulse.

But though *Sennertus*, in his *Institut.* defines a quick Pulse to be, when the Artery, in a short time, performs its Motion; yet he afterwards confesses, that the Celerity of the Pulse cannot be estimated by Space, because that Space cannot be known by the Touch; for which Reason, in defining a quick Pulse, he orders us to regard the Quality of the Motion; whether, for Instance, it is brisk, or slow. Hence *Fernelius*, and some others, have defined a quick Pulse, such an one as, in a short time, distends the Artery; and a slow Pulse, that which produces the same Effect in a long time. *Bellini*, in *Tract. de Pulsibus*, informs us, *That it is a quick Pulse, which, upon the Application of the Finger, persists a very short time; whereas a slow Pulse continues longer.* According to *Sennertus*, *Fernelius*, and others, it is a frequent Pulse which has a short Time of Rest, or in which there is but a short Time interposed between each Diastole; a rare Pulse is that which has a long State of Rest, or in which there is a long Time between one Distention of the Artery and another; or a frequent Pulse is that which, in a short time, distends the Artery, and becomes perceptible to the Touch; whereas a rare Pulse only produces these Effects at longer Intervals. The Word Frequency cannot, however, be properly applied to Motion; but the Celerity or Slowness, the Intension or Remission, of the moving Force are properly competent to Motion; since every Degree of Motion is to be estimated by its Celerity or Intension, and its Slowness or Remission: But one Motion, considered in itself, cannot be said to be frequent, or rare; but this Difference only holds, with respect to the Plurality and Number of Pulsations happening in a certain determined Time. Thus, for Instance, the Motion, or Impulse, is said to be frequent, when, in half an Hour, Water is an hundred times forced from a Syringe; whereas the Motion is said to be rare, when the Water is forced from it only thirty times during half an Hour. Thus, when a Globe, for In-

stance, is impelled, the Celerity of the Impulse may justly take place, with respect to each Stroke; and yet these Strokes be applied more rarely, or at longer Intervals; and thus any Stroke, applied to a Globe, may be remiss, or small, with respect to Violence, and yet frequently repeated.

This Doctrine holds excellently in those Motions which are not continual, but have certain Intervals of Rest, and in which this Distinction is of singular Use; so that quick and frequent Pulses ought not to be joined and confounded with each other. But 'tis far otherwise in the Motion of the Arteries, which is continual, and requires no Rest, in order to carry on a continual Circulation of the Blood from the Heart to the Arteries, from these to the Veins, and from these to the Heart again. It is not to be imagined, that, when after the Pulse, or Dilatation of the Artery, no Motion or Stroke is perceived by the Touch, the Artery becomes inactive, and remains in a State of Rest, since we have already shewn, that, immediately after its Dilatation, it not only by its proper elastic Force, but, also, in consequence of the Influx of the Spirits into its muscular Fibres, recoils, and is contracted; by which Contraction the Blood is forced into the Veins, and a fresh Dilatation of the Artery immediately succeeds. Hence the Pulse may justly be compared to a Pendulum, which performs a continual oscillatory Motion from one Side to another, without any perceptible Rest. With respect to this continual Motion, which the Antients did not understand, but which is sufficiently comprehended by the Moderns, there arises a Dispute, whether Frequency, and Celerity, applied to the Pulse, are separate and distinct from each other. We shall now examine this Difficulty in order to prevent Mistakes: When, therefore, in a Quarter of an Hour, a Physician counts two thousand Pulses in a Patient, he calls the Pulse preternaturally frequent; when, during the same time, he in another Patient counts only a thousand Strokes, he pronounces the Pulse rare. Now, if another Physician, being call'd, should denominate the frequent Pulse quick, and the rare one slow, the Question is, Which of them is in the right? I answer, Both; for, since the Motions of the Heart and Arteries consists in their continual Systole and Diastole, it is impossible, that, during a small Portion of Time, the Number of Pulses should increase, and be observed greater, unless every Systole and Diastole of the Arteries should become more brisk and intense, that is, be performed in a shorter time; just as we observe in the Vibrations of Pendulums, which, the more numerous they are in a certain time, the more short and quick they must of course be; for 'tis to be observed, that the Celerity of one Pulse by itself cannot be perceived, because it hardly lasts an Instant. Hence *Sylvius*, that happy Practitioner, in *Prax. Med. Lib. 1. Cap. 19.* informs us, "That the Celerity of the Pulse can be conceived in the Mind, though not estimated by the Touch." *Bellini*, also, in *Tr. de Pulsibus*, speaks in the following manner: "A quick Pulse, because it affects the Touch but for an Instant, in a State but a little receding from a natural one, either does not happen at all, or, if it does, cannot be distinguished by the Touch, since the natural Dilatation of the Artery hardly lasts an Instant. Much less can the Celerity of the Pulse be perceptible in a preternatural State." Hence 'tis obvious, that a Pulse cannot be called frequent, unless it is, at the same time, accompanied with Celerity; nor quick, unless it is frequent; because one Stroke cannot be easily distinguished with respect to Celerity. Hence *Schellhammer*, in *Tr. de Pulsibus*, justly observes, that the Frequency of the Pulse is not to be found without a concomitant Celerity. Hence the Reason is obvious, why in physical Authors we never read of a frequent and slow Pulse accompanying each other, or of a quick and rare Pulse going hand-in-hand; which Species of Motions may easily be conceived to happen in an interrupted Motion, but can never occur in one of the continued and uninterrupted Kind. Hence it follows, that the various Species of Pulses are by no means to be refer'd to the Nature of any local Motion, or Impulse of a Body, so as to lay a Foundation for asserting that of the Pulse, which can be affirmed of such a local Motion; for the Antients were ignorant of the Circulation of the Blood, from which all the Species and Differences of Pulses ought to be sought, and accounted for.

'Tis sufficiently known, that almost all Physicians, both antient and modern, constitute a peculiar Difference between a quick and a vehement Pulse, since they call the former intense, quick, and brisk, and its Opposite remiss; and the latter strong and robust, and its Opposite weak and languid. And as they deduce the Celerity of the Pulse from its Motion performed in a short time, so they derive its Vehemence from the strong or weak Force of the moving Cause. But a considerable Difficulty occurs here; Which is, whether a quick Pulse may not, also, be called a vehement one, and accounted as such, since Celerity, in the Opinion of all Mathematicians, is nothing but an increased, or more intense, moving Force. But an Increase,

or an Intension of the moving Force, or Celerity, is capable of producing considerable Effects, or of overcoming a great Resistance. Now the Vehemence of Motion is only properly applied with respect to the Effects, when, for Instance, by the Action of the moving Cause, a large Quantity of moveable and resisting Matter is removed. Hence all who are Masters of statical and mechanical Learning, agree, that the Celerity of a small Body may be able to remove a large Weight or Bulk of Matter, since 'tis certain, that a Globe of a certain Diameter, moving with double Celerity, produces more considerable Effects, than a Globe of double the Diameter, moving with less Celerity.

Besides, 'tis remarkable what surprising Effects are produced by some of the most subtile Bodies, such as Air, Ether, and Fire, when in a quick and rapid Motion. *Galen*, in *Lib. 3. de Different. Puls. Cap. 5.* seems to think, that the Celerity and Vehemence of a Pulse are not much different from each other, as he informs us in the following manner: "The Word *Vehemence*, says he, is commonly used in order to express some strong, and, at the same time, quick Action; and the Persons who perform such Actions, are called *σφοδρῆσι*." The same Author, also, informs us, in the Part last quoted, that if he had a Power of giving Names to the Pulses, he would call the simple Quality, or Difference, of such Pulses as resist the Touch, "*Force* or *Strength*, or some such thing; and the Difference compounded of this Strength, and the Celerity, *Vehemence*." But because the Word *Vehemence* is, by most Physicians, used to express one of the simple Differences of Pulses, he thinks it is to be retained, and not changed. But that this Affair may be rendered more clear and perspicuous, we are here, according to the Principles of Statics and Mechanics, to suppose that Vehemence may be considered in a double respect, either with respect to the Body in Motion, or with respect to the Augmentation of the moving Force. In general, Motion is said to be vehement, when it has great Force, produces great Effects, or overcomes much Resistance. Hence a Pulse is said to be vehement, which makes a strong Impression on the Hand which feels it; whereas, that is called *languid* and *weak*, which affects the Hand in a faint and languid manner. But Vehemence, with respect to the Body in Motion, is, when either its Quantity of Matter, or its moving Force, is great. Hence a Body of great Bulk, and moving Force, is of great Force when put in Motion, or produces a vehement Motion.

The Word *Vehemence* is, also, applied to the Increase of the Motion, that is, when it becomes brisk, intense, and quick. Hence 'tis obvious, that a very small Body may, by being put into a quick Motion, produce very considerable Effects; but that a still more considerable Efficacy is exerted, when the Quantity of Matter, and the Celerity of Motion, concur. Though, therefore, according to *Galen*, a quick Pulse, considered in itself, is never free from Vehemence, yet that Pulse is only properly and strictly called *vehement*, where a large Quantity of Spirits animate the Fibres of the Heart. This Pulse, when without Celerity, is called *strong*; but, when accompanied with Celerity, *vehement*, and at the same time large, when not a small, but a great Quantity of Blood is forced into the Arteries by one Systole of the Heart; and then, which is the Sign of a vehement Pulse, it beats the Finger strongly, and with a kind of Violence. But because it is not necessary, that under a quick Systole of the Heart there should always be a great Quantity of Strength or Spirits, nor that the Blood should always be expelled copiously, but few Spirits are often sufficient, hence the Artery is not in this Case forcibly struck, though the Pulse is at the same time quick.

Since the Antients, as we have already observed, deduced the Species of Pulses from the Nature of local Motion, and feigned as many Species of Pulses as there are Species of Motion; so there are, especially in *Galen*, numberless Differences of simple and compound Pulses described with respect to Time, Space, Instrument, Order, Equality, Proportion of Strokes, and moving Force. But afterwards, when they found these speciously contrived Differences either incomprehensible, or useless in Practice, they justly exploded and discarded them. Thus *Joh. Bapt. Montanus*, in *Consil. 256.* frankly confesses, that he was ignorant of the minute Differences of the Pulses; and tells us, that he believed *Galen* had something of the Greek Subtlety about him, and laugh'd in his own Mind, when he was reducing the Kinds of Pulses to their several Species. He afterwards adds, that though these Differences may possibly be conceived in the Mind, yet they are not all perceptible by the Touch. *Caspar Hoffman*, in *Institut.* speaks in the following manner: "The short Compendium of *Goldaldinus*, de *Pulsibus*, is, in my Opinion, preferable to the three Volumes of *Galen*, concerning the Difference, Causes, and Prognostics, of Pulses. These last Works I take to be Herophilæan Subtleties, which he might have invented, not only when young, but, also, when he had the Advantage of Experience and Practice. This Opinion I was induced

"to entertain by *Montanus*, in *Consil. 257.*" I was told by a Friend in *Italy*, who heard the Account from the Mouth of *Bartholomæus Schwalbius* himself, a celebrated Physician of *Prague*, that this Practitioner was content with three Differences of Pulses, an equal, and an unequal; a quick, and a slow; a strong, and a weak. *Plempius*, also, in *Fundam. Medic. Lib. 5. Sect. 2. Cap. 2.* tells us, "That Physicians trifle egregiously about Pulses, since the Subtlety of some of their Minds had induced them to constitute Differences of Pulses, which could not be perceived by the Senses." The celebrated *Welschius*, in *Oper.* tells us, "That, in the whole Doctrine of Pulses, many things uncertain, superfluous, and imaginary, have long ago been discovered by the Learned, who have observed a quite different Motion in the Circulation of the Blood, which they ascribe to the Pulsation and vital Force of the Heart, whilst others attempt to account for it by Inventions of their own, rather than by mechanical Reasons." *Sylvius* has reduced the numerous Differences of Pulses invented by the Antients, to three Heads, that is, the Strength, the Largeness, and the Frequency, of the Pulse. By a strong Pulse, he means one of the vehement Kind, which with a certain Force strikes the Finger that touches it. The weak Pulse is, when it gently, or slightly, affects the Finger. The large Pulse is, when the Artery is dilated much; and the small, when it is only a little dilated, or expanded. The frequent Pulse is, when, in the same Space of Time, the Pulsations happen oftener than at other times, or more frequently than in other Patients. And the rare Pulse is, when the Strokes or Pulsations of the Artery, happen less often than they used to do.

But, that we may reduce things to the better Order, and establish the genuine Differences of Pulses, which occur in Practice, both in a natural and preternatural State, we must, first, from the Principles of Mechanics, suppose that all Motion is quick or slow; for Celerity and Slowness are genuine Properties of Motion. Hence *Galen*, in *Lib. de Pulsibus ad Tyrones, Cap. 3.* justly informs us, that Celerity and Slowness properly belong to Motion; that the former is a brisk, and the latter a slow and remiss Motion; and that from these we were to form a kind of comparative Judgment concerning the natural Pulse. Secondly, all Motion is performed in a large, or in a respectively small Space; and is consequently either vehement, or languid. Thirdly, with respect to Order, Motion is either equal or unequal; and the Equality is to be understood, both with respect to Time or Celerity, and with respect to Magnitude or Vehemence. And, fourthly, with respect to the moveable Body, Motion is either great or small.

Now we suppose, that the Motion of the Heart and Arteries is continual, and consists of the reciprocal Systole and Diastole, without any Interruption; for which Reason, every Pulse is either large or small. The large is, when much Blood is by one Contraction of the Heart thrown into the Artery; in consequence of which, its Dilatation is large and full. The small Pulse is, when, in consequence of little Blood forced into the Artery by one Systole of the Heart, the Expansion of the former is but small and inconsiderable. Besides, the Pulse is either quick or slow. The quick is produced, when the Heart quickly, and in a short time, contracts itself, and throws the Blood into the Artery. The slow, on the contrary, is, when the Contraction of the Heart requires a longer Time, or when the Conveyance of the Blood into the Artery lasts considerably long. But, as, in every Pulse, the Degrees of Celerity and Slowness cannot be accurately estimated and computed, because they happen in a Moment, hence, from the Frequency, that is, when, during the same time, the Expansion of the Artery is observed oftener than at other times, the Celerity of Pulses ought to be determined; but in such a manner, that the Frequency be only made the Sign, Characteristic, or Measure, of the Celerity, and the Rareness of the Slowness; because Frequency is not applicable to any Motion, considered in itself. But, in a continual Motion, which, however, consists of different Species, a Systole, for Instance, and a Diastole, where one is perceived, and the other not, we ought in Justice to make an Estimate of the Celerity from the large Number of the perceived Motions, or Strokes. Thirdly, the Pulse is either equal or unequal; equal, when there is an exact Equality with respect to the Celerity or Frequency of the succeeding Pulses, as, also, with respect to their Largeness and Smallness. The Pulse is said to be unequal, when one Stroke is large, and another small and weak; or when one is quick, and the other very slow; so that the Pulse seems to be intermittent, though the Intermision of the Pulse may be more properly referred to that Species of Inequality which consists in a great Slowness. Fourthly, the Pulse is either vehement and strong, or weak: The vehement Pulse is, when the Systole of the Heart is performed by a large Quantity of moving Force, or Spirits; and the weak, when the Heart is contracted by a small Quantity of Spirits.

The Differences, formed by the Antients, of the vermicular, formicating, tremulous, serrated, and caprizating Pulse, depend partly on the Inequality of the Pulses, but, most of all, on the Convulsion of the Coats composing the Arteries; for which Reason they are almost always to be esteemed dangerous in acute Disorders. As for the hard and soft Pulse, these depend only on the State and Condition of the Artery; for, when, in consequence of an excessive Pain, Spasms, or Convulsions, the Coats of the Artery become hard, so that the Resistance makes a strong Impression on the Touch, the Pulse is said to be hard. The soft Pulse is, when the Fibres of the Coats of the Arteries are flaccid, relaxed, and moist. When a large and vehement Pulse concurs with such a soft State of the Arteries, it is called *an undulating Pulse*, which is the Forerunner of a profuse and copious Sweat.

From these simple Differences, we may easily discover what Species of Pulses may be joined with each other, and what not. First, then, there is a Pulse compounded of the large and quick; of the large and vehement; of the strong and quick; and of the vehement and small. Secondly, there is a Pulse compounded of the frequent and weak, and of the quick and small. There is, also, a slow and a large Pulse, such as that which happens in a natural State, and in plethoric old Persons, as, also, in some melancholic and scorbutic Patients. But there is never a quick and a slow Pulse, nor a slow and a rare, nor a vehement and weak Pulse, unless we intend to confound Words.

As the Motion of the Heart and Arteries depends, first, upon the Quantity and Strength of the spirituous, elastic, and expansive Substance, contained in the Blood, and nervous Fluid; secondly, on the due Tone of the muscular Fibres of the Heart and Arteries; and, thirdly, on the proper Temperature, Quantity, and Consistence of the Blood, so it is to be deduced and accounted for from these Sources. Now 'tis certain, that Life, Health, and the due Order of the whole Body, depend upon a proper and equable Circulation of the Blood and Humours through the solid Parts; so that the better regulated, and the more equable, the Circulation is, the more perfectly Nature preserves herself, and cures the Diseases incident to her; and, on the contrary, the more this Circulation recedes from a due and equable State, the weaker Nature is said to be, and the more subject to Misfortunes and Diseases. 'Tis, therefore, of the greatest Importance, that the Physician should know the Circulation peculiar to each Patient both in a natural and preternatural State, that he may be the better able to form a Judgment of their Disposition to Diseases, and of the Nature and Event of their Disorders. Now every one must own, that the Circulation of the Blood cannot be better investigated than by feeling the Pulse, not in a superficial manner, but frequently, and for a sufficient Time; for the Pulse not only discovers the Imperfections and Strength of the whole Body, but, also, the Nature of the Blood, and the State of the various Secretions. And, as a Pendulum of a Clock, by its equable and regular Vibrations, manifests the Worth of the Clock; so the Pulse discovers the Habit of the Patient, and the Vigour or Depuration of all his Functions.

We now come to inquire what a moderate, constant, and equable Pulse is, since it is, as it were, the Rule and Measure by which we are to judge of the rest. A moderate Pulse, therefore, is that which is large, but neither quick nor slow, hard nor unequal. This is the Pulse with which all others ought to be compared, and which denotes the best State of Health, the Absence of all preternatural and foreign Things, and a due and temperate Degree of Heat; for when such a Pulse is present, the Fluids are duly spirituous, the Fibres possessed of their natural Tone, the Blood temperate and fluid, and consequently the Transpiration free, the Nutrition good, the animal Functions vigorous, the Secretions duly carried on, and the Patient in a State of good Health. But when the Pulse is quicker, and consequently more frequent than usual, it indicates a preternatural Irritation of the Heart, as the Antients express it, unless it proceeds from external Causes; but if such a Pulse continues long, it infallibly denotes a Disorder accompany'd with an Increase of Heat, and even a Fever. It is generally produced by an inordinate intestine Motion of the Blood, and a Change induced on the Crasis of the Spirits by an Admixture of heterogeneous, and often caustic Particles. When the Pulse is vehement, and, at the same time, quick, it indicates a feverish Intemperature, an Admixture of something heterogeneous with the Blood, Lymph, and Spirits; but, at the same time, a large Quantity of Strength and Spirits. If a vehement and quick Pulse is, also, large, the Circulation of the Blood is brisk, the Heat and Thirst great, and the whole Habit red and turgid. Where the Pulse is small, and little Blood is conveyed from the Heart to the Arteries, and from the Veins to the Heart, the Circulation of the Blood is faint and languid. Hence the Transpiration and Secretions are but

small, and the Strength little: But, if a small Pulse is, at the same time, weak and frequent, or quick, it denotes a great Languor of the Strength, a preternatural intestine Motion, and a weak Circulation of the Blood; and, if this Species of Pulse continues long, it indicates Malignity, and great Danger.

A slow Pulse generally denotes a Viscidity, Thickness, and weak Circulation of the Blood, together with a Languor of the Secretions; but if it is at the same time weak, it is dangerous, and raises a Suspicion of a total Loss of Strength. But a Pulse which is slow and large, denotes sufficient Remains of Strength, Tension, and Thickness, of the Fibres, of the Heart and Arteries, and a viscid and tenacious Blood. All unequal Pulses are very bad, since they denote, that there is neither a due Influx of the Spirits, nor a proper and equal Mixture of the Blood; but, particularly, such Pulses always prognosticate unlucky Events, when they are weak. Intermittent Pulses are, also, of a bad Kind, or generally accounted the Prefages of Death. But it is not universally so, for an intermittent Pulse frequently happens without Danger, where, for Instance, the Symptoms are of a bad Kind, and the Patient's Strength still entire. Hence this Species of Pulse frequently happens in hypochondriac and melancholic Patients, where the intestine Motion of the Blood is diminished by its Thickness. But when the Pulse is weak and quick at the same time, it generally prognosticates Death. An hard Pulse generally indicates Pains, Spasms, and Convulsions, because the Fibres of the Heart and Arteries are spasmodically constricted. The irregular, caprizating, and discontinued Pulses, denote a very bad State of the Body, both with respect to the fluid and solid Parts.

It is carefully to be observed, that one Kind of Pulse is not found in all Persons; for as the Pulse depends on the Tone of the muscular Fibres, on the Influx of the Spirits, and the Nature and Temperament of the Blood, and as all these are surprisingly various in human Bodies, with respect to Age, Sex, the Season of the Year, the Climate, the Method of Life, the Sleep, and the Passions of the Mind, so, also, the Pulses vary from each other according as these Circumstances differ. Thus Men generally have a large and vehement Pulse, and Women one of a more slow and weak Kind; for the former have stronger Fibres, and an hotter Blood, than the latter: For this Reason, also, the Circulation of the Blood is brisker in Men than in Women, and the former do not generate such Loads of redundant Blood and Humours, as Women, who are generally weaker, and more subject to Diseases. Choleric Persons, and those of sanguine choleric Constitutions, have a larger, quicker, and more vehement Pulse, than phlegmatic and melancholic Persons; for which Reason the Fluids move more quickly, the Excretions are made more expeditiously, and the Blood is more fluid, in the former than in the latter; for the Blood of the former is impregnated with a larger Quantity of oleous and sulphureous Parts, which are, as it were, the Source and Matrix of Heat, and a spirituous Quality. Thus, also, those of a slender Habit, who have strong Fibres, and large Vessels, have a larger and stronger Pulse, than those who are fat, have lax Fibres, and narrow Vessels. Hence they are, also, sounder, more robust, and more capable of enduring Fatigue. This is, also, the Reason, why those who are naturally thick and fat, are more readily seized with Sickness, and destroy'd by it, than those of slender Habits.

In Infants and Children the Pulse is frequent and soft, whereas in old Persons it is slow and large, whilst in young Persons, and those full-grown, it is large and vehement; for, generally, Infants and Children generate a large Quantity of Humours, which are necessary to their Growth, and collect a great deal of Sordes, which is the Reason why Infants and Children are more generally seized with Sickness, and more readily die of it, than Youths and Adults. Old Persons have thick Blood, but rigid Fibres; for which Reason their Pulse is hard, and makes a forcible Impression on the Touch. But in Infants and Children the Pulse is soft, on account of the Tenderness and Laxity of the Fibres. The Pulse is, also, changed by the Season of the Year, the Exercise of the Body, the Aliments, and the Affections of the Mind. In the Middle of the Spring, the Pulse is large and vehement; at this Season, also, the Strength is greatest; for which Reason Persons are at that time most rarely sick, and recover most easily. In the Middle of the Summer, the Pulse is quicker and weaker, because, by the intense Heat, the Strength is impaired, whilst the intestine Motion of the Fluids is greater than it usually is. In Autumn the Pulse is slower, softer, and weaker, than at any other Season, and in the Winter harder, a little more vehement, and slower. Among Kingdoms and Climates, those which are hot and sultry, may be compared to the Middle of the Summer; those which are cold, to the Winter; and such as are temperate, to the Spring.

Exercise increases the Pulse, and consequently the Circulation of the Blood, whilst an idle and inactive State renders the Pulse slow, weak, and languid, and diminishes the Circulation of the Fluids. Spirituous Aliments render the Pulse large, vehement, and frequent. The Pulse of such as are asleep is slow, small, and languid; but as soon as they awake, it forthwith becomes large, quicker, and stronger. The Pulse of those who are angry is large, vehement, and quick; that of such as are frightened, frequent, small, and inactive; and of those who are sorrowful, small, languid, and slow. So that, according to *Fernelius*, in *Lib. 3. de Pulsibus*, "The common and ordinary Affections of the Body change the Pulse; so that, without duly adverting to these Affections, the Pulse cannot be certainly understood, nor can it be determined how far it recedes from a natural State, in consequence of Diseases." The natural Pulse is, therefore, to be felt and observed, not immediately after Exercise, Bathing, immoderate Eating, drinking Wine, or other Causes, which exagitate the Heart and Spirits; for we are to determine nothing about the Pulse, till the Force of external Causes has ceased, and all Perturbations of the Body are allay'd; for the Pulse is the most certain Sign and Criterion for judging of the Motion of the Heart and Blood. But if the Pulse alone is observed, without paying a due Regard to other Circumstances, it may lay a Foundation for forming a false Judgment; because, as *Celsus* says, in *Lib. 3. Cap. 6.* the Pulse may be disturbed by a thousand things.

There has almost always been a considerable Dispute among Physicians, what Pulse is essential to Fevers, or constitutes their pathognomic Sign. Many of the Antients, among whom *Galen* was the first, inform us in their Works, that a quick and frequent Pulse denotes a Fever. But many of the Moderns take a frequent Pulse for the genuine Sign and Characteristic of a Fever. Thus *Sylvius*, in *Prax. Med. Lib. 2.* speaks in the following manner: "A preternaturally frequent Pulse is the Sign, which, at all times, belongs to a Fever alone, and is consequently its pathognomic Sign; so that, when this Sign is present, a Fever is present; and, when it is absent, so is the other, also; nor is any other Sign universally proper to all Fevers, hitherto discovered by Practitioners." For all other Signs do not so properly denote a Fever, as the Species, the Degree, or the Time, of a Fever. *Etmuller* tells us, "That a preternaturally frequent Pulse is, justly accounted the pathognomic Sign of Fevers, by *Sylvius*, both in his *Dissertatio de Natura Februm*, and in his *Praxis*, whatever *Deusingerius*, in *Tract. de Disquisitione Antisyloana*, may affirm to the contrary." *Decker*, a practical Physician of *Holland*, in *Not. ad Barbette*, informs us, "That there is a Fever, where-ever a preternaturally frequent Pulse is observed." *Schelhammer*, in *Tr. de Puls.* tells us, that in all Fevers there is a frequent Pulse, which, when accompanied with Heat, is their pathognomic Sign. The celebrated *Bohnius*, speaks in the following manner: "In a frequent Pulse, the Strength of the Heart seems equal to the morbid Cause, if this frequent Pulse remains in an uniform manner, and is consequently the pathognomic Sign of Fevers; but if a Weakness of the Pulse is combined with its Celerity, it indicates Loss of the Strength more or less, as more or fewer and vehement Strokes are observed." Other Authorities would be of no Use; only we must observe, that, upon a false Hypothesis, not only the Antients, but, also, many of the Moderns, made a Distinction between quick and frequent; for they called the Pulse frequent, if within a certain time frequent Pulsations were made, whereas by a quick Pulse they meant one of the vehement Kind. Hence *Willis*, in *Tr. de Febris*, calls that a *febrile Pulse*, in which the Arteries vibrate vehemently and quickly; where he, also, asserts, that if the Pulse becomes more vehement, the Fever is augmented. *Caelius Aurelianus*, in *Lib. 1. Acut.* tells us, "That the Sign of Fevers is an intense Heat, and a vehement Pulse, unless it should be produced by some external Cause."

For these Reasons *Brown*, in *Observationibus Medicin.* every-where asserts, that a quick and a weak Pulse are contrary to each other; so that by the Word quick, 'tis obvious, he meant vehement. Tho' Authors hardly as yet seem to have formed distinct Notions of Pulses, yet all, both antient and modern, seem to agree in this, that a frequent Pulse in every Species of Fever, whether continual, or intermittent, whether benign, or malignant, whether in its Beginning, or at its Height, proves such a Fever to be present: Hence they always join the frequent either with the quick, or with the weak, Pulse; so that they agree, that the frequent Pulse is rather to be called the essential Sign of Fevers, than the quick, which none of them will hardly assert to be found, either in the Beginning or Horrors of Fevers, or in any of the malignant Kind.

But, from what we have supposed, it is sufficiently obvious; that these Differences may be excellently reconciled, since the quick Pulse is nothing else but the frequent, which is the true pathognomic Sign of Fevers. But this Frequency is either greater or less, and associates itself with the great or vehement, or with the small and weak, according to the Diversity of Fevers, and the Times of the Disease. A frequent Pulse, when weak and small, is scarcely ever good, since it denotes a languid and slow Circulation of the Blood. But a frequent, large, or vehement Pulse, such as is generally observed in the Height of continual Fevers, denotes a brisk Circulation of the Blood; and an increased Heat of the Body. In investigating the Cause of a frequent Pulse, which is generally preternatural, and accompanies several Disorders, we shall follow the accurate *Bellini*, who, in *Tract. de Pulsibus*, accounts for the Motion of the Heart from the Influx of the Blood through the Coronary Arteries, and of the nervous Fluid through the Nerves into the Fibres of the Heart; from which he concludes, that the Muscles of the Heart are most frequently moved, when the nervous Fluid is most frequently convey'd into them, which happens when it is forced into them by a sufficient Quantity of Blood flowing forcibly into the Brain. Now, by a frequent Contraction of the Heart, a frequent Pulse is produced; which indicates, that a proper Quantity of Blood is convey'd to the Brain, and that the Brain is forcibly pressed; which will happen, either when the Blood stagnates therein, in consequence of an Obstruction of its Veins; or when the Blood contain'd in these Veins cannot flow into other Parts, the Blood, in the mean time, stagnating, either in the internal Parts, or in the Lungs; or when the Blood is thrown into a State of Effervescence, by which it assumes a Tendency to move in every Direction with a greater Impetus, and by that means presses the Brain more powerfully. The Muscles of the Heart, also, move more frequently, when irritated by any Stimulus. If, therefore, the Blood is too acrid, or hot, so as to stimulate the Sinuses of the Heart, the Heart will be more frequently contracted, and the Frequency of the Pulse will indicate a stimulating Quality in the Blood.

Since we have shewn, that from the Pulse we are to form a Judgment, not only of the Circulation and Temperature of the Blood, but, also, of the Motion of the Spirits, and the Strength of the Patient; so the Knowledge of the Pulse, and a due Attention to it, must be of singular Use to the Physician, not only in investigating the Natures of Disorders, and forming a right Judgment concerning them, but, also, in prescribing Medicines for their Cure. But it is to be observed, that the Pulse is to be carefully, and not superficially, consulted. The Physicians of *China* are far more careful in this respect, than those of *Europe*; for those often spend a whole Hour in feeling the Pulse, whilst the Physicians of our Country have hardly Patience to feel above two Pulsations; a Practice highly culpable, since after ten Strokes of the Artery, an Inequality, or Intermision, often occurs; which happens whilst the unequally mixed Blood passes through the Heart. The Pulse is, also, to be felt in both Wrists, in the Neck, and in the Temples, since 'tis certain from Experience, that the Pulse in the Wrists frequently varies, and may be more commodiously felt in one than in another. We ought, also, to advert to the Pulses of other Parts. Thus, sometimes, hypochondriac Patients perceive a large Pulse under the Ribs on the Left Side; which happens, when a quick and viscid Blood, exagitated by Heat, or any other Cause, endeavours to procure a quick Passage through the Pancreas and Spleen; but, stopping in their narrow Vessels, produces a Pulsation, and a kind of pricking Pain. Hence *Joh. Ant. Vander Linden*, in *Select. Medic.* tells us, "That the Blood, in this Case, raises a kind of Tumult within, by pricking and striking on the Spleen." How intense the pricking Pains of the Spleen are, some sound Persons experience, as soon as they are over-heated. *Tulpius*, in *Cent. 2. Obs. 28.* mentions a Man who had a preternatural Pulsation in the Spleen. In continual and malignant Fevers, a large internal Pulsation in the Veins of the Head generally denotes a subsequent Delirium; since it is a Sign, that the Blood there congested circulates slowly, till at last, becoming stagnant, it produces a violent Inflammation of the Meninges. *Hippocrates*, in *Coac. Praenot.* informs us, "That if a large Pulse arises from an excessive Ebullition of the Blood, so that in Fevers the Veins of the Temples beat, and the Face is turgid, without a Softness of the Praecordia, there is Reason to suspect, that the Disease will be long, and that it will not terminate without a large Haemorrhage from the Nose, an Hiccup, Convulsions, or Sciatic Pains." The Reason of this, in my Opinion, is, that the redundant Blood seeks for an Outlet, either by the Nose, or the haemorrhoidal Veins; and the sooner this happens, the sooner the Patient is freed from his Disorder.

When

P U L

When a Pulsation is observ'd in any Part of the Body, where at other times it is not felt, we may certainly conclude, that the Part is inflam'd, and dispos'd to a Suppuration; especially when it is accompanied with Tumor and Pain. An hard Pulse is almost an infallible Sign of an Inflammation in the Membranous Parts; for this Hardness of the Pulse, or excessive Tension and Vibration of the Artery, indicates something of a spasmodic Nature, arising from the Consent of the Parts, and produc'd by the Inflammation and Pain. The Pulse of Persons labouring under Disorders of the Breast, or a Palpitation of the Heart, is generally frequent, unequal, and languid. But such a Pulse, unless when vehement, is accompanied with no preternatural Heat; and happens because the Blood does not pass thro' the Sinuses of the Heart, and the Lobes of the Lungs. In Weakness, and a Disposition to Syncope, the Pulse is generally small, rare, and languid; but if the Pulse is absolutely imperceptible, the Body cover'd with a cold Sweat, and the Functions of the Mind are not totally destroy'd, I have frequently observ'd, that the Patient infallibly dies in six Hours; and such a Situation I have seen twice produc'd by corrosive Poison. It is to be observ'd, that about the critical Times in Fevers, when Nature endeavours to throw off the superfluous and peccant Matter by Stool or Sweat, the Pulse, tho' languid, is yet more regular, and less frequent, which is a certain Sign of Recovery. But if the Pulse is soft and undulating, it is a Sign, that a salutary critical Sweat is just coming on.

It is, also, to be observ'd, that the Pulse is chang'd by Medicines. Thus, after drastic Purgatives, which procure too many Stools, the Pulse is generally preternaturally quick. After Venesection, especially in plethoric Habits, the Pulse becomes quicker, a Sign that the Circulation of the Blood, in consequence of its having a larger Space, is happily increas'd; since, by this means, a Suppression of the Menstrues or Hemorrhoids is generally remov'd. 'Tis certain, not only from the Authority of Sydenham, but, also, from Experience, that after the Use of Chalybeates, the Pulse is quicker, the Face redder, and the Heat greater. Strong Sudorifics, compos'd of volatile oleous Substances, greatly increase the Pulsation of the Heart and Arteries. On the contrary, Anodynes, Opiates, Preparations of Nitre, precipitating Powders, Acids, and such things as diminish the intestine Motion of the Blood, and fix its Sulphur, render the Pulse calm and moderate in Pains, Inflammations, and a febrile Intemperature. Such an Effect I, also, once saw produc'd by a due Mixture of Nitre and Camphire. As Dr. Willis has justly observ'd in *Traët. de Febris*, some very useful and important Rules for the Exhibition of Medicines are drawn from the State of the Pulse. Thus Purging and Vomiting are contra-indicated by a too quick and vehement Pulse; as, also, by a low and depress'd Pulse; for when the Blood is in a violent Motion and Ebullition, the Secretions are generally very languid. If the Strength is defective, which may be known by the languid State of the Pulse, Emetics and Purgatives diminish the Strength still more; so that the Physician ought to consult the Pulse, before he exhibits them; for when the Pulse is strong, and the Motion of the Blood regular, these artificial Evacuations are most beneficial, and succeed best. The same Caution is necessary in the Exhibition of Sudorifics, and all Analeptics, which convey Heat and Motion to the Blood; for if the Pulse is strong and frequent, such Spirituous Substances do more Injury than Good, because they rarefy the Blood too much, and accelerate its intestine Motion; by which means a Delirium, and other Inflammations, are frequently brought on. Great Circumspection, and Attention to the Pulse, is, also, requisite in the Exhibition of Narcotics or Opiates; for as these are possess'd of a Power of stopping the Motion of the Blood and Spirits, and consequently of impairing Strength, so they ought never to be exhibited when the Pulse is weak, languid, and small, but are to be avoided like Poison. But if the Pulse is unequal and intermitting, Opiates readily procure a perpetual Sleep. *Fred. Hoffman.*

PULVERATIO, or PULVERISATIO, Pulverisation, in Pharmacy, is the reducing any Substance to a Powder. See **TRITURATIO** and **PULVIS**.

PULVILLUS, in Surgery, is a Pledget, Bolster, or Compress.

PULVIS. A Powder.

The Operation of reducing Medicines into Powders is so very simple in itself, that it requires no other Skill, than having those Things which come under its Management, sufficiently dry, in order to be so divided.

In judging of the Fitness of Materials for this Treatment, only these two Considerations necessarily require our Attention. The first is, whether the Things themselves are thus reducible, without any previous Management, that may hurt their medicinal Virtues; and, next, whether their Virtues are conveniently preserved in this Form, when reduced into it.

Under the first of these, it naturally occurs, that viscid and oily Substances cannot be thus managed, without first reducing them to some Brittleness, which cannot be done without drying. If such things, therefore, cannot be sufficiently dried for Triture,

P U L

without exhaling their better Parts, or destroying that particular Quality, for which the Simple is valued in Medicine, as it happens with many Seeds and Gums, they are much fitter for some other Forms than for this; though these Inconveniences may be avoided, where such Things bear so small a Proportion to those which are very dry and brittle, that they are so lost, and, as it were, absorbed by them in Triture, that all pass the Sieve well enough together. But this, however, should make the Prescriber wary of crowding into any Composition, under this Form, too many Gums or Seeds; and the Preparer careful in giving them a requisite Brittleness by drying; which latter may, in some measure, be known by the Compositions preserving the Scent, or particular Qualities, of the Ingredients suspected.

The other Requisite in this Form, relating to the Preservation of Things reduced into it, directs not to prescribe Materials therein, which are volatile, or will any other way change in the open Air: Thus the finer Aromatics will decay, and every thing very volatile, as the Radix Ari; for which Reason it is now ordered to be mixed at the time of taking. All the alkaline Salts, likewise, are not to come into this Form, because they will dissolve in Air; on which Account the Salt of Wormwood is an improper Ingredient in the *Pulvis Radicum Ari compositus*. These latter Inconveniences may indeed be, in some measure, avoided, by keeping such Compositions as have in them these exceptionable Ingredients, in Vessels stopp'd close from the Air: But the Necessity of frequently opening them in the Shops, for common Occasions, will subject them more to such Decay, than is consistent with keeping them any long time good.

Having a View of these two Requisites, we are better able to judge, both of officinal and extemporaneous Prescriptions in this Form: And, for our better Inquiry into the former, it may be, also, of Use, as is already done in some other Forms, to range them under such general Intentions, as they seem contrived, by their first Inventors to answer.

The *Species Diambrae*, *Pulvis Diacinnamomi*, *Species Dianthus*, and *Pulvis latifolius Galeni*, seem, by most of their Ingredients, to be intended for Cephalics and Cordials, as they consist of the warmer Spices, and Simples of similar Properties; but in the *Pulvis Diacinnamomi* the Cassia is much inferior to the Cinnamon in Flavour, and gives a Sliminess to the moist Form; but the Elecampane-root is a powerful Detergent, and quite out of the Intention. The Sugar, likewise, occasions an unnecessary Bulk in a Dose, when given in Powder, an Electuary, or a Bolus; and therefore would be better omitted. In the *Species Dianthus*, the Liquorice is blameable, on the same Account as the Elecampane-root in the foregoing; and in the *Pulvis latifolius Galeni*, the Rasuræ Eboris, Epithymum, Os à Corde Cervi, and Margaritæ, are chargeable with contributing nothing to the main Intention of a Cordial, though the Leaf Silver and Gold are very beautiful Decorations, if rubbed but coarsely in at last, that they may be seen to Advantage; but the Camphire, it is to be feared, will render it not so fragrant while it lasts, though even very close Keeping will not long retain its Volatility.

Some others, near approaching to this Intention, take in Simples, that give them, also, an Astringency; such as the *Aromaticum Rosatum*, *Pulvis Granorum Kermes compositus*, and *Pulvis Cardiacus Magistralis*; none of which are chargeable with an useless or unsuitable Ingredient, unless the Bezoar be reckoned so in the latter: However, it is pretty certain, that its Virtues do not compensate for its Cost; and indeed not much can be said for the Saunders and Aloes-wood; but the Custom of mixing them with those things has long prevailed.

The *Pulvis Diacalamintus simplex*, thus intitled, in Distinction from a much larger Composition given in former Dispensatories, and the *Species Diatrium* and *Piperum*, seem principally intended for Carminatives; though the former hath something in it aimed, also, against Hysterical Affections, and is pretty much used in both these Intentions with Success. The *Pulvis de Gutteta* was heretofore a Composition, consisting principally of such things, as were supposed to be very efficacious in some nervous Cases, by their specific and secret Virtues; as the Viscus Quercus, the Ungula Alcis, and Cranium Humanum; but there are now added many things of very manifest Properties, as the Radix Valerianæ, Contrayerva, and Serpentaria; but whether the calcined Hartshorn, Coral, Hyacinth, and Bezoars, will yet allow this to be duly reformed, and an uniform Composition, is much to be doubted; for if they can, with the Specific before-mentioned, be supposed to contribute any thing to the main End, yet it must be allowed to be so little, that they have not their Share, but are a Clog upon the Efficacies of some others, which, by these means, cannot be so conveniently given in their due Quantities. By long Experience, it has, likewise, been found, that Musk does Harm in many nervous Cases: Where, therefore, there is Reason to judge it proper, it is very easily ordered at the time of extemporaneous Prescription. The Leaf Gold, as was before observed, is an agreeable Ornament, and can do no Harm. The *Pulvis Cephalicus* is designed for a Snuff.

The

P U L

The next Class of alterant Species may be reduced under the Title of Alexipharmics, at the Head of which it may be thought Injustice not to put the compound Powder of Crab's-claws: But the Lapis Contrayervæ seems to come under the same Rank much more properly; which the present Practice acknowledges, by taking notice of it much oftener than the other, though the greatest Dependence upon this is from the Contrayerva-root, which, both in its Smell and Taste, manifestly discovers the Quality of an Alexipharmic, which principally consists in a volatile Pungency.

The *Pulvis Radicum Ari compositus* is the only Composition in this Form, that aims at being an antiscorbutic; but its principal Ingredients, as has been already observed, will not keep long in this Form; and, when mixed with Boluses or Electuaries, the Oculi Cancrorum, and Sal Abſinthii, soon make it ferment and four.

Some of this Form are given for Emollients and Diuretics, as the *Species Diatragacanthæ frigida*, *Pulvis Haly*, *Pulvis Saxifragiæ compositus*, and *Pulvis Dialthææ*. But the principal Ingredients of these, especially of the former three, which are the cold Seeds, those of Poppies, and the like, are not only difficult to powder, but, when so reduced, will soon grow rancid. The Starch and Sugar are, indeed, some Helps against the first Inconvenience, by assisting the oily Seeds to pass the Sieve, and they seem intended for no other Purpose; but they are not sufficient to preserve them, when so done. Besides, all these things are so much easier brought into Emulsions, and with such greater Advantages to the Patient, that these Forms are now little used. The *Pulvis Dialthææ* does not, indeed, take in so many of these oily Seeds, and is more agglutinant by reason of the Quantity of Gums in it; but it is not often met with in common Prescription.

All the rest of this Division of Compounds, unless the *Pulvis Antilyssus*, are Cathartics. The greater and lesser Compositions with Sena are so crowded with Seeds and Spices, under the Notion of Correctors, that a sufficient Quantity for a Dose makes the Bulk too large to take in any Form; which seems to be the Reason, why they are very seldom prescribed or made.

But the *Pulvis Diasenæ* takes in Diagrydium enough to avoid this Inconvenience. There hath been in some of the old Dispensatories a *Pulvis Artheiticus Turneri*, of which the *Pulvis Diaturpethi compositus* seems to be a good Abridgment, as taking in some of the principal Ingredients, and leaving out many useless ones, with which that was crowded. The *Pulvis Cornachini*, and *Pulvis Comitissæ Warvicensis*, are exactly the same, except in the Proportion of Ingredients, in which respect they likewise differ but little. They are quick enough of Operation in small Quantities, which occasions them to be given frequently to Children.

What hath been already taken notice of, as necessary to be regarded in the Official Prescriptions of this Form, should, also, be equally attended to in the extemporaneous Practice; that is, not to direct any thing in a Powder, which will waste by its Volatility, or which is not reducible to it, without such previous Management, as will hurt its medicinal Virtues. All volatile Salts, in particular, ought to be avoided in these Prescriptions, as that of Hartshorn, Sal Ammoniac, and the like; though, in the Salt of Amber, there is somewhat so fixed, that it will remain a considerable time in this Form, without any discernible Loss. Some regard, also, in common Practice, is to be had to the Vehicle, with which some things have, and others have not, a peculiar Fitness for Moisture. Thus the Æthiops, and every thing that takes in Sulphur, when prescribed in Powders, should be ordered to be taken in a Syrup, or some Pulp, because it is very troublesome to mix with any thing thinner; its offensive black Colour is, also, best disguised with Prunes or any thing of like Kind. Every Powder, likewise, that takes in crude Antimony, any of the Mercurials, or Things of light Weight, must be trusted in thin Vehicles, because they will immediately settle, and, by reason of the small Quantities, be liable to be left, at the Bottom of what they are given in. Sufficient Notice hath been already taken of the Unfitness of all Salts, made by Incineration, for this Form, and every thing dissolvable, or any way changeable, by the Air. Powders, likewise, which take in any resinous Substances, as Scammony, Resin of Jalap, or any thing of like Texture, should be directed in Vehicles of some Consistence, and be carefully mixed, because in thin ones they are subject to run into Lumps, which are not easily again dissolvable.

The Doses of most Powders ought seldom to exceed half a Dram, because of the Difficulty of taking them; and, rather than to put things together, which have not sufficient Efficacy in that Quantity, it is more eligible to have recourse to things of like Intention in some other Form.

There is one Convenience, indeed, in this Form, which in common Practice may not be so duly considered as it deserves; and that is, where Persons have a great Aversion to many Medicines, they are sooner decoyed into a Compliance with Powders, than as many Boluses or Draughts, because they do not make so formidable a Shew; but in acute Cases, where the

P U L

Stomach has been dried with much Heat, too many of these, especially of the warmer Alexipharmics, as the Contrayerva and Snake-root, are not usually judged so proper as the liquid Forms, and the Virtues of the same things drawn out by Infusion. *Quincy's Prælect. Pharm.*

PULVIS ANTILYSSUS. See ANTILYSSUS.

PULVIS RADICUM ARI COMPOSITUS. See ARUM.

PULVIS CARDIACUS MAGISTRALIS:

The magisterial Cardiac Powder.

Take of oriental Bezoar, and of calcined Hartshorn, of each one Dram and an half; of white and red Coral prepar'd, white Amber, prepared Pearls, Armenian Bole, Japan Earth, and of Tormentil-root, of each two Drams; of Aloes-wood, Citron-peel, Angelica-root, and Zedoary, of each two Scruples: And make them into a Powder together.

PULVIS, E. CHELIS CANCRORUM COMPOSITUS. See CANCER.

PULVIS CEPHALICUS:

A Cephalic Powder.

Take of the Leaves of Asarabacca; Marjoram; and Lilies of the Valley, each any Quantity: And make them into a Powder together.

PULVIS CORNACHINI.

Cornachine's Powder.

Take of sulphurated Diagrydium, ten Drams; of diaphoretic Antimony, six Drams; of Cream of Tartar, two Ounces and an half: Make them together into a Powder.

Schroder tells us, its Author was so fond of it, as to write a whole Treatise about it, wherein he recommends it in almost all Cases that require Purging. Its Dose is from eight Grains to one Dram.

PULVIS GRANORUM CHERMES COMPOSITUS.

Compound Powder of Cherries-berries.

Take of Cherries-berries one Dram, of Nutmegs, two Scruples; of Tormentil-root, and of yellow Sanders, of each half a Dram; of Cloves, prepared Pearls, and both Corals prepared, of each one Scruple. Let them all be made into a Powder together.

PULVIS DIACALAMINTHES SIMPLEX:

Simple Powder of Calamint.

Take of Mountain Calamint, Penny-royal, Origany, Seeds of Macedonian and common Parsley, and of Hartwort, of each two Drams; of Smallage and Thyme, of each half an Ounce; of Priver-seeds, and white Pepper, of each one Ounce: And mix them into a Powder.

PULVIS DIATURPETHI COMPOSITUS:

Compound Powder of Turpeth.

Take of Turpeth, Jalap, and Hermodactyl-roots, of Tartar of Vitriol, each equal Quantities; and make into a Powder, *S. A.* Its Dose is from half a Scruple to a whole Scruple.

PULVIS DIALTHÆÆ. See ALTHÆÆ.

PULVIS DIACINNAMOMI:

Compound Powder of Cinnamon.

Take choice Cinnamon, fifteen Drams; of Cassia-bark, and Elecampane-root, of each half an Ounce; of Galangal, seven Drams; of Cloves, Long-pepper, both the Cardamoms, Ginger, Mace, Nutmegs, and Aloes-wood, of each three Drams; of Saffron, one Dram; of white Sugar-candy, five Drams: Make them into a Powder.

PULVIS DIASENÆ. See SENÆ.

PULVIS ERYSIPELATODES. A Mynsichti.

Take of volatile Meal, half a Pound; of calcined Lead, and red Bole, each two Ounces; and of Mastich, Olibanum, and Cerusa, each one Ounce: Mix all together, and reduce to a fine Powder.

Pulverize together the Bole, and the Cerusa: Then pulverize separately the Olibanum in a Mortar, rub'd over with some Drops of Oil, and the Mastich moisten'd with some Drops of Water. Then mix these Ingredients, when powdered, with

P U N

with the calcined Lead, and the fine Meal, for a Powder, to be preserv'd for Use.

It is proper to dry and cure the Tetter or Ring-worm: A small Quantity of it is to be laid on the Part affected, and cover'd with blue Paper, after the Patient is blooded and purg'd. This Powder may cure a mild and simple Ring-worm: But, when it is obstinate and rebellious, much happier Effects will be produc'd by the following Powder;

Take of the volatile Meal of Barley, half a Pound; of dry Elecampane-root, one Ounce; of the Salt of Lead, and white Precipitate Mercury, each three Drams: Mix all together. *Lemery Pharmacop.*

PULVIS AD GUTTETAM. See GUTTETA.

PULVIS HALY:

Powder of Haly.

Take of white Poppy-seeds, ten Drams; Starch, Gum Arabic, and Tragacanth, each three Drams; the Seeds of Purslain, Marshmallows, and Mallows, each five Drams; Cucumber, Melon, Gourd, Citruls, and Quince-seeds cleansed, each seven Drams; Liquorice, three Drams; white Amber, two Drams; Sugar-candy, the Weight of the Whole: And make them into a Powder. It may be given from half a Dram to two Drams.

PULVIS LÆTIFICANS GALENI:

Galen's Cordial Powder.

Take of cloved Basil-flowers or Seeds, Saffron, Zedoary, yellow Sanders, Cloves, Citron-peels, Galangal, Mace, Nutmegs, and Storax, each two Drams and an half; Ivory-raspings, Aniseeds, Thyme, and Dodder, each a Dram; the Bone of a Stag's Heart, Pearls, Camphire, Ambergise, and Musk, each half a Dram; Leaf-gold and Silver, each half a Scruple: Make them into a Powder together, according to Art.

PULVIS MARCHIONIS. See MARCHIONIS PULVIS.

PULVIS COMITIS WARWICENSIS.

Earl of Warwick's Powder.

Take of Scammony, prepared with the Fumes of Sulphur, two Ounces; diaphoretic Antimony, one Ounce; the Crystals of Tartar, half an Ounce: Make them all together into a Powder. It is a smart Purge, and frequently given to Children, against Worms, from five to fifteen Grains; and, to Adults, from fifteen Grains to half a Dram.

PUMEX. Offic. Schrod. 355. Matth. 1371. Kentm. 37. Boet. 400. Gesn. de Lap. 31. De Laet. 130. Worm. 47. Charlt. Foss. 21. *Seyrus Lapis*. Aldrov. Mus. Metall. 696. *Lapis Pumex diffusus*. Cap. Hort. Cath. Supp. 2. 53. THE PUMICE-STONE.

This is a porous and spongy Stone, full of small Cavities and Perforations, and found in *Germany*, whence it is transported to us. It is of a refrigerating, drying, and extenuating Quality. It gently cleanses Ulcers, and renders Cicatrices full and seemly. *Schrod.* In Mount *Vesuvius*, *Ætna*, and other burning Mountains, large Quantities of this Species of Stone are found with the Sulphur. The Uses of it are enumerated by *Wormius* in his *Museum*. *Dale*.

PUNCTA LACHRYMALIA. See FISTULA LACHRYMALIS, and OCULUS.

PUNCTICULARIS FEBRIS. An eruptive Fever, or a Fever attended with Purple Spots.

PUNCTUM SALIENS. The first Rudiments of the Heart in the Fœtus.

PUNCTURA. A Puncture. *Punctura aurea*. See HERNIA.

PUNICA.

The Characters are;

The End of the Pedicle passes into an Ovary, on whose Top grows a monophyllous multifid Calyx, of a very florid red Colour, and shaped like a Bell. The Flower is rosaceous, polypetalous, growing on the Ovary within the Calyx, and furnished with very numerous Stamina. The Ovary, after the Flower is fallen off, and the Stamina wither'd, contracts the Calyx into an Umbilicus, and passes into a Fruit, resembling an Apple, and containing, under a very rough Rind, and vinous Pulp, a Multitude of Capsules full of numerous Seeds;

Boerhaave mentions three Sorts of *Punica*; which are,

1. *Punica*; quæ *Malum Granatum* fert. *Tourn. Inst.* 636. *Boerb. Ind. A.* 2. 250. *Granata*, *Mala Punica*. Offic. *Malus Punica*. J. B. 1. 76. *Rait Hist.* 2. 1462. *Malus Granata sive Punica*. Ger. 1262. *Emac.* 1450. *Malus Punica sativa*. C. B. P. 438. *Park. Theat.* 1510. *Parad.* 428. THE POMEGRANATE-TREE.

P U R

This Tree grows not to be of any great Bigness, even in its native Countries, having on its Branches here-and-there a few Thorns; the younger Shoots are of a redish-brown Colour, and have their upper End pretty thick-set with long narrow smooth Leaves, two Inches in Length, to half an Inch in Breadth; among these come forth the Flowers, of a glorious scarlet Colour, consisting of five Leaves, set in a rough brown Calyx, which, in time, enlarging itself, becomes the Bark or Covering of the Fruit, having a Crown on its upper Part, being, in Shape and Bigness, like an Orange, but with a browner and harder Peel, in the Inside of which grows a great Number of corner'd Acini or Kernels, compacted close together in a regular Order, containing either a sweet vinous Juice, or one more acid and acerb, with a little Stone in the middle of each. Pomegranates grow in *Spain*, *Italy*, and many other Countries, and flower in *June*, and the Fruit is ripe in *September*. The *Balaustines* are the large double Flowers of the wild Pomegranate Tree; which differs not in its manner of Growth from the other. See BALAUSTIA.

The *Balaustines*, as well as the single Flowers, and the Bark, are very drying and restringent, good for all sorts of Fluxes, Hemorrhages, and Bleedings, both inward and outward: They strengthen the Gums, fatten loose Teeth, help the Falling down of the Uvula, and cancerous Ulcers in the Mouth and Throat. The Fruit is grateful to, and strengthening of the Stomach; stops Looseness, and the immoderate Flux of the Terms; and is useful in hot bilious Fevers, and Gonorrhœas.

Official Preparations are only the Syrup of the Juice. *Miller's Bot. Off.*

2. *Punica*, fructu dulci. T. 636.

3. *Punica*; flore pleno; majore. See BALAUSTIA, and *Punica*; quæ *Malum Granatum* fert. *Boerb. Ind. Alt. Plant.*

PUPILLA. The Pupil of the Eye. A Dilatation of the Pupil of the Eye is esteem'd a Sign of a general Relaxation of the Fibres; and a Contraction thereof, a Mark of Stricture. See OCULUS.

PUPPIS OS. The Os FRONTIS. The Suture in this Bone is call'd the *Sutura Puppis*.

PUPULÆ. The Extremities of the Fingers.

PURETTA. An heavy sort of Sand, or magnetic Powder, found near *Genoa*, on the Sea-shore. It is not us'd in Medicine.

PURGAMENTUM. The *Lochia*; or the Excrements discharg'd by Stool.

PURGAMENTUM STELLARUM. The same as COR-LIFOLIUM.

PURGANTIA. Purgative Medicines. See CATHARTICA.

PURGATIO. See CATHARSIS.

PURGATORIUM, in *Paracelsus*, is a Name for any Disease.

PURPURA. Offic. *Purpura nostras violacea*. Col. de Purp. 1. *Purpura violacea* Fab. *Columnæ*. List. Hist. Conch. 4. Sect. 15. n. 1. *ex Terentino Sinu allata*. Bonan. 150. n. 172. THE PURPLE-FISH.

This Fish is frequently found in the *Mediterranean Sea*. In the Shops no Part of it is us'd, except the Shell, which is strong, furrow'd, striated, and rough, with short Tubercles. In former Ages the Sanies of this Fish was us'd for dying: The Shell is of an alkaline Quality, and in Virtues agrees with other testaceous Medicines.

In describing the Purple-fish, the Antients were so short and obscure, as to lay a Foundation for the Moderns to dispute what kind of Shell-fish they meant by that Name, since they describe various Species, the Sanies of which dyed a purple Colour. But *Fab. Columnæ* has determined the Controversy, by discovering the true Purple-fish. But tho' at present the true Purple-fish is hardly known in our Shops, yet, as Dr. *Martin Lister* observes, an Account of its Juice has been traditionally handed down from the earlier Ages to our own Times; but that this Juice was reckon'd among the Arcana, and carefully conceal'd, till Dr. *William Cole* discover'd it in *Æt. Philosoph. Lond.* N° 178. Besides, Dr. *Robert Southwell*, President of the Royal Society many Years ago, informed Dr. *Lister*, that whilst his Mother liv'd in *Ireland*, she was famous for staining Handkerchiefs with the Juice of a certain Fish, the Colour of which could not be washed out. The Art of Dying Purple was, also, not only known, but highly esteem'd, in *England*, in the Times of *Bede*; for, says that Author, in *Hist. Eccles. Gentis Angliæ*, *Lib.* 1. *Cap.* 1. there are large Numbers of Shell-fishes, by means of which a purple Colour is dyed so strong and beautiful, that, instead of being tarnish'd by the Influence of the Sun, or the Injury of the Rain, the older it grows, the more beautiful it becomes. *Dale*.

PURPURA.

The Purples, a Disorder which at present rages universally, is a Disease of a peculiar Nature; proceeds from a Scurvy; and is accompanied with an Eruption of Efflorescences on the Surface of the Body, sometimes with a pretty acute and malignant Fever, and, at other times, without such a concomitant Symptom, genly, though for a long time, disturbing the Functions of the Body.

As the Purples is a peculiar Species of Exanthematous Disorder, it is expedient to inquire, by what Circumstances it may be distinguished from other Diseases of the Exanthematous Kind. The peculiar and essential Characteristics, therefore, of the Purples are these following: First, the Papulæ, which appear, are accompanied with a Corrugation, Roughness, and Driness of the Skin. Besides, no Exanthematous Matter is so moveable, as that of the Purples, which frequently and quickly retire, to the internal Parts, and, after some time, appear again on the Surface of the Body. Nor is any of the Exanthematous Disorders so frequently attended with alternate Heat and Cold, Itchings, and pungent Pains. Besides, all the other Species of Exanthematous Disorders appear equally on all the Parts of the Body; whereas the Purples principally discover themselves on the Neck, Breast, Back, and Arms, rarely infesting the inferior Parts: By which peculiar Marks it may be easily distinguished from the Small-pox, Measles, Petechial Fever, scorbutic Spots, Chicken-pox, that Fever accompanied with Efflorescences resembling those excited by the Stinging of Nettles, the Herpes, the Itch, Phlyctænæ, and the Impetigo.

The Efflorescences of the Purples differ much with respect to Bulk, Figure, and Colour; for sometimes the Papulæ are red, and sometimes white. Hence the Purples are distinguished into those of the red and those of the white Kind. The former Kind has Vesicles more or less broad, which contain a Liquor; whereas the latter has no Vesicles, but only small Nodes, deep-seated in the Skin, resembling the Figure of a Grain of Millet, rough to the Touch, and infarcted with a thickish, and, as it were, purulent Humour. Hence the former Disorder is called the *white Miliary Purples*.

The Purples are, also, observed to be more or less benign or malignant; those of the malignant Kind are more acute than the other, accompanied with a continual Fever, and Symptoms highly offensive to Nature. But the benign Kind continues long without a Fever, is accompanied with Symptoms less offensive to Life, and seizes and proceeds principally with these Signs: This Disorder is preceded by a slight Horripilation; which is succeeded by an intense Heat, accompanied with a Languor, and Loss of Strength, which, in weak Habits, proceeds to a Delirium. The Præcordia are constricted, and the Breast oppressed. The Patient, is, also, afflicted with deep Sighs, Anxieties, Inquietudes, Watchings, or laborious and disturbed Sleeps; an Heat, and pungent Pain, are perceived in the Back, whilst the Heat and Cold are alternate, and most sensible, in the Palms of the Hands. In Child-bed Women, the Lochia are retained; and the Milk in the Breasts, being resorbed, ceases to flow from them. These Symptoms are succeeded by a Roughness and Corrugation of the Skin, like that of a Goose, with innumerable Papulæ, either red or white, or both, mixed with each other, in Figure and Smallness resembling Millet-seeds; and which first appear on the Neck, then on the Breast and Back, and, last of all, on the Arms and Hands; and, upon the Eruption of these on the Surface of the Body, the Symptoms, which were before violent, especially the Anxiety of the Præcordia, the Cardialgia accompanied with a Syncope, the Inquietude, the Compression of the Breast, and the Difficulty of breathing, are considerably mitigated. The Pulse, which was before hard and quick, is now soft, free, and slow; the depressed Vigour of the Mind returns; the dry Skin becomes moist; and the Patient, who was before so costive, that he could discharge no Flatulences, has his Body rendered soluble; and sometimes not only the Flatulences, but, also, the Fæces, are spontaneously discharged.

There is a considerable Remission of the Symptoms, either in the red or white Purples, or in a Mixture of both, if they constantly continue after the Eruption; for the Vesicles, which are full of a fetid Ichor, are gradually enlarged; nor do they quit their Station, and retire: The Urine is, also, more saturated; the Sweat, which in this Disorder is highly fetid, breaks out; the Discharge of the Lochia returns; and the Milk is restored to the Breasts; the Body being either spontaneously soluble, or rendered so by a Clyster, or Suppository, the Fæces and Flatulences are discharged; and, in seven, or more Days, the Pustules disappear, with a considerable Itching of the Extremities, and the Patient is gradually restored to Health: For all these Circumstances indicate, that the Patient is not excessively weak; but that the solid Parts as yet retain their moving Force and Vigour; and that the whole Temperature of the Blood, and lymphatic Juice, is not destroyed; in consequence of which, the adventitious and unfriendly Matter is continually and equably separated from the vital Juices, and conveyed from the internal to the external Parts.

But it is otherwise in the malignant Purples, in which, after a sufficient Eruption of the Efflorescences, the Pulse is preternaturally quick; nor does the Sleep return, nor is the Inquietude allayed, nor the Respiration rendered free; besides, there are generally too copious Profusions of Serum by Sweat, which, if they happen in the Beginning of the Disorder, induce a great Loss of Strength, and, as it were, a paralytic Resolution of the Skin. Purples of the malignant Kind may be, also, known by the pale, thin, and copious Urine, or the continual Stimulus to discharge the Urine; as, also, when the Urine, which was before high-

coloured and saturated, suddenly becomes pale, limpid, and thin, in consequence of the spasmodic Stricture of the Kidneys, and urinary Passages.

It, also, frequently happens, as a bad Omen, that in the Purples the Pustules sometimes appear, and at other times disappear, whilst the Symptoms are always equally violent; all which evince, that the Force of Nature is impaired, the Strength diminished, and the Tone of the Skin, that nerveo-tendinous and porous Emunctory, through which the whole Mass of Blood and Humours is purged, is destroyed; so that its most external, nervous, and sensible Portion is sometimes spasmodically contracted, and sometimes relaxed. But it is still a worse Sign, if the peccant Matter, returning, is firmly lodged in the internal Parts, and resists all Attempts to expel it again to the Surface of the Body; by which means the Symptoms are rendered more violent; the Oppression of the Breast, and Sighing, are augmented; the Loss of Strength, and the Anxiety of the Præcordia, accompanied with Inquietude, increased; and all the other Circumstances rendered worse. Hence all, who are taken off by the Purples, die on account of the Recels of the peccant Matter, and the Increase of the Symptoms produced by that Cause; for tho', before the Eruption of the Purples, the Matter producing the Disorder is highly malignant and peccant, yet, when it is separated from the Mass of Blood, and placed without the Limits of the Circulation, it, by its Continuance, assumes a far worse Nature; and, if it returns to the Parts subservient to Life, especially those destined to the Purposes of Sensation and Motion, it operates in a manner resembling that of Poison. Hence, as, in all Exanthematous Disorders, such as petechial Fevers, Small-pox, Measles, Gutta Rosacea, Itch, Scal'd-head, Gout, and Arthritis, a certain Matter, unfriendly to Nature, and at the same time propelled to the external Parts, renders the Symptoms more violent if it returns to the internal Parts, and mixes with the vital Juices, so it is certain from Experience, that, upon the Disappearance of the Purples, the Sordes received into the internal Parts of the Body are of a like hurtful and prejudicial Quality.

That the Event will be fatal, and that the Death of the Patient is not far off, may be known from the following Signs: If, in consequence of a deleterious Matter firmly lodged within, the internal Parts are excessively hot, whilst the external Parts, being constricted, are covered with a profuse cold Sweat; or if an intense Heat of the external Parts, and a considerable Sense of Refrigeration in the Abdomen, are alternately perceived; if there is a subfultory Motion of the Tendons; if the Hippocratic Face appears; if the Defect of Strength increases; if an uneasy Despair disturbs the Mind; and if the Pulse is hard, unequal, and tremulous: For, if these Symptoms happen, the Patient is generally soon after seized with a Delirium, which proves mortal.

Though the Purples, with or without a Fever, is often a primary or idiopathic Disease, yet it is frequently, as a Symptom, complicated with other Disorders, especially continual Fevers, when near terminating, and is then not without Danger; for it very frequently happens, that the red or white Purples, or both together, happen in the Decline of the Small-pox, Measles, putrid Synocha, burning Fevers, petechial Fevers, and those resembling them, and other epidemical Disorders; on which Occasion they induce a new Fever, accompanied with a violent Train of Symptoms; so that when Persons, labouring under acute Fevers, are apparently out of all Danger, they are suddenly seized with an Horror, Uneasiness, Inquietude, Watching, preternatural Heat, and Loss of Strength, whilst the Purples, in the mean time, here-and-there appear on the Surface of the Body; and, by extinguishing the Strength exhausted by the preceding Disorder, generally put an End to the Patient's Life. I have, in a particular manner, often observed, that the symptomatic Purples were fatal to young Persons labouring under acute Fevers, who have before lived intemperately, indulged themselves in drinking to Excess daily, consumed their Strength in Venery, and induced a foreign Crasis and Disposition of their Humours; as, also, to Patients, who, during the Progress of the Disorder, have been so costive, as to discharge none of the Excrements for some Days; and to those, who have had too large Quantities of refrigerating and acidulated Medicines exhibited to them, such as Julaps and Potions. The Purples not only frequently appear in the Decline of acute Disorders; but, also, often, in the Beginning and first Days of the Disorder, something like the Purples appear with a kind of Roughness, especially in the Small-pox and Measles, tho' very rarely with an happy Termination of the Disease; for this Circumstance is an infallible Proof, that the Mass of vital Humours is filled and contaminated with various excrementitious Sordes. The Purples, also, accompanied with a Cough, and Difficulty of breathing, a Vomiting, or Flux, frequently attend the catarrhus Fevers of Children. In this Case, if the Disorder is in the Decline, the Purples are succeeded by a Swelling of the Feet, and sometimes of the Abdomen, with or without a Driness of the superior Parts; and the Purples, as is observed in the mountainous Parts of the upper *Black Forest*, are totally removed by Sweats, either arising spontaneously, or procured by Art.

The red Purples are, from the Beginning, always accompanied with a kind of febrile Commotion, which is perpetually exasperated towards the Evening: Yet, in Process of Time, the Fever, and Frequency of the Pulse, are mitigated; the Symptoms allayed; and

and the Disorder assumes a benign Nature. Hence, if, in the Beginning, this Disorder is imprudently treated, and if the Body is cacochymic, or full of impure Juices, it frequently continues for several Months, not without great Uneasiness to the Patient, and fresh Returns of the Symptoms, though the Disorder generally terminates happily.

That the Purples are the Offspring of the Scurvy, we have already observed: But this will be more effectually evinced, if we diligently consider the material Cause of both Species of Purples, which, as well as that of a Scurvy, depends upon a Dyscrasy of the Blood. But, in assigning this Cause, I am of Opinion, that our Sentiments quadrate with Truth, when we affirm, that the red Purples arise from an impure, saline, acrid, sulphureous, and excrementitious Serum; and the white Purples, and an acute Miliary Fever, from the Lymph, and nutritive Juice, approaching to an acid, vapid, and putrid Nature; for both these Juices of the human Body are of a different Nature; for the Serum is called that Humour, which, being mixed with the Blood, and impregnated with many saline and mucid Parts, to be secreted and eliminated through numberless Emunctories and Strainers, is of a thickish Consistence, and of various Colours and Tastes. But the Lymph is that pellucid, insipid, and pure Liquor, the more subtle Part of which affords the Matter of the Fluid of the Brain, Spinal Marrow, and Nerves, as, also, of the seminal Liquor. The gelatinous Parts of this Fluid nourish all the Solids of every kind, and its finer aqueous Parts are, through the lymphatic Vessels, by means of the Valves, and conglobate Glands, again conveyed to the Heart; where, being again united with the sweet aereo-elastic Parts of the Blood, and, as it were, animated afresh, it is with it conveyed to all the Parts of the Body, for proper Uses. Hence, when these Fluids recede from their natural State and Disposition, they acquire a peculiar kind of Corruption; from which afterwards arises the different Genius of the Disease, the different Violence of the Symptoms, and the greater or less Danger.

That, in the white Purples, the Lymph is tainted with a kind of Acidity, is obvious from many Circumstances; and especially that a redundant Acid is contained in the Mass of Blood and Lymph, we may know from the excessive Secretion of Serum, usual, if not essential, to this Disorder; for such is the Force and Nature of an Acid, that, when it insinuates itself into the Blood, it coagulates its thicker Parts, and produces a Secretion of Serum; we may know by which means profuse Sweats are promoted, a copious Discharge of thin Urine occasioned, a Salivation excited, or aqueous Stools brought on.

Having premised these things, we now come to inquire, why the white Purples are most incident, and generally fatal, to Child-bed Women. As, therefore, in general, all those, whose Bodies contain a Redundance of lymphatic and aqueous Humours, as most Women do, are rather subject to an acid Vapescence, than a salino-sulphureous Corruption of the Humours; for which Reason they are principally seized with the white Purples; and this is, in my Opinion, the true Cause of the Frequency of this Miliary Fever in Child-bed Women; for, in the Uterus of pregnant Women, both the Progress and Return of the Blood, by reason of its too great Congestion in that Part, and the Distention of the Vessels, is very languid, slow, and difficult; hence, the Blood stagnating long there, the lymphatic Humour is copiously secreted into the Vessels destined for its Conveyance; and, remaining, as it were, pent up in their Cavities and Windings, by its long Continuance becomes vapid, is corrupted, and contracts an Acidity, whilst the more subtile spirituous Parts, the best Preservers of the due Mixture of the Fluids, fly off. When, therefore, after the Birth of the Fœtus, the Uterus collapses, and is contracted, whilst the squalid lymphatic Humour, and feculent Blood, are not discharged and eliminated, on the third Day, generally, after the Labour, a febrile Motion happens; by which the peccant Lymph and Blood are repressed into the larger Vessels, conveyed to the Heart; and thence, like a malignant Leaven, diffused through the whole Body in such a manner, as to infect and contaminate the whole Mass of Blood, Lymph, nutritive Juice, and nervous Fluid.

But if the Impurity and Dyscrasy of the Blood and Serum is of the saline, acrid, and sulphureous kind, the Symptoms are not so violent, but the Efflorescences are more chronic; the Face is inflated and high coloured; the Eyes are sparkling; the itching Heat, and Sense of Puncture, in the Skin, are greater; nor is the Patient afflicted with so great Inquietude, Anxiety, and Difficulty of breathing; which Circumstances lay a Foundation for greater Hopes of Recovery. He may, also, be presumed to be in a fair way, unless the white Purples succeed those of the red Kind, or the red should be changed into white, which frequently happens in consequence of a bad Regimen, a preposterous Cure, or the Influence of violent Passions; whilst the superabundant Lymph is corrupted, and, at last, in the Fever, and hot intestine Motion of the Parts, the spirituous, fine, and sulphureous Parts, fly off, leaving behind those of a gross, acrid, and vapid Nature.

Besides, if we more narrowly consider the Origin and Nature of that Matter, which produces Purples of a chronic and less dangerous Kind, we shall find, for several Reasons, that it princi-

pally consists of the salino-sulphureous and acrid Particles of the Serum, which are not eliminated through the Emunctories, especially the Skin, but remain in the Habit, and, by the hot intestine Motion, assume a worse Quality. This is confirmed by Experience, because the Purples of a chronic Kind generally seize those, whose Bodies abound with impure Blood, such as scorbutic Persons; old People; Women whose Menstrues are suppressed; Men whose usual hæmorrhoidal Discharge is obstructed; those who are accustomed to a saline, vinous Diet, coarse Malt Liquors, and smoking Tobacco; as, also, those, who have loose Habits of Body, and such as lead too sedentary Lives. Besides, the Cause of this Disorder is generally a sudden Suppression of Perspiration; and, by that means, a Repulsion of the Sordes, either by a cold Air compressing the Pores, drinking too cold Liquors, or sudden Frights. I have known Instances, in which Persons overheated, and covered with a profuse Sweat, have, after a Train of violent Symptoms, been seized with an Eruption of the Purples; many, also, upon exposing their Bodies to cold Northerly Winds, after they have been overheated in Bed, by the Heat of the Sun in travelling, or that of dry Baths. The cold and tempestuous Constitution of the Atmosphere long continuing, and obstructing Perspiration, is the Cause that the Purples so frequently recur, particularly after the Winter Solstice, especially in the Months of *January* and *February*. The surprising Influence of a cold and Northerly Wind, in intercepting and suppressing even the preternatural Excretions through the Skin, is, by a memorable Instance, confirmed by *Lazarus Riverius*, who, in *Obs.* 53. informs us, that a certain Boy was afflicted with an Imperigo, which discharged an ichorous Matter; but that Northerly Winds coming on, this fetid Matter was suppressed, conveyed to the Lungs, and excited an Asthma, which did not cease till the Return of Southerly Winds.

But nothing more effectually discovers the salino-sulphureous Substance, in the Purples of the chronic Kind, than that those Medicines, which involve and correct the saline Spiculæ, such as Whey, together with Goats and Asses Milk, mixed with the *Selteran* Waters, as, also, temperate Decoctions used for ordinary Drink, not only afford Relief, but, also, totally cure the Purples. Besides, though this Species of Purples is free from Danger, yet, if it is treated with too much external Heat, internal heating, or volatile Medicines, in the same manner as in the Itch, ulcerous Pustules, and other Defecations of the Skin, arising from a peccant and saline Disposition of the Humours, the Heat, Pain, and Itching, are increased, and frequently a Thirst and Fever excited; because the Salts, being, by these means, rendered more acrid, insinuate themselves deeply into the small Fibres of the Skin, which they lancinate and vellicate.

This chronic Exanthematous Disorder is more uneasy, and accompanied with a far greater Itching and Heat, than the white Purples mixed with the red; which can only be ascribed to the saline and acrid Particles pricking the sensible Substance of the Skin. The saline Acrimony of the Humours is, also, evinced from this; that salutary, sweet Waters, free from a saline Element, and a purgative Quality, such as those of *Lauchstad*, when drank by those afflicted with the habitual Purples, have rendered the Body remarkably soluble, procuring daily six or eight Stools, the Matter of which is so acrid, as to corrode the Anus; whilst, a few Days after, the purgative Effect gradually ceases; nor, if next Year the Drinking these Waters is repeated, does the same purgative Effect follow. It is, also, to be observed, that, in the Purples, especially of the obstinate, chronic, and scorbutic Kind, after the Use of Milk, or temperate mineral Waters, I have, with great Success, ordered a Bath of sweet Rain-water, by the repeated Use of which all the Puncture, Heat, and Itching, of the Skin were removed, and the Efflorescences disappeared; an infallible Proof, that, by correcting the Acrimony of the Humours within, and eliminating the acrid Recrements lodged under the Skin, through the Pores relaxed in the Bath, the Disorder is removed, and the Patient cured.

We shall now specify the Reasons, why no Exanthematous Disorder, when cured, so easily and frequently returns, as the red scorbutic Purples. This Effect, then, seems to be produced by two Causes: First, because, in this Disorder, the Tone of the Skin is considerably injured and destroyed; and, secondly, because the Subject and Seat of frequently returning Purples are the conglobate Glands; for as the Skin is an universal Emunctory to all the Humours, and of singular Use in the Preservation of Health, so the Injuries done to the Constitution by any Disorder in this Emunctory are certainly very great: But this Covering of the Body is easily injured by various Causes; since it is not only composed of the sensible Filaments of the Extremities of the Nerves, but is, also, totally tubulous and porous, because the small Mouths of the minute Arteries, which convey the subtile, exhalable Matter, terminate in it; for which Reason, both with respect to its Tubes and Pores, as, also, with respect to its Substance, it has not only a subtile Motion, and Tone of Dilation and Constriction, but, also, an exquisite Sensation. Hence, the greater the Sensibility of the Skin is, the more subject to Injuries it is, and the more easily its due Motion is perverted. It is, in a particular manner, easily altered and constricted by cold Northerly Winds,

Winds, and relaxed by moist warm Southerly Winds; so that it constitutes a true microcosmical Hygrometer. External Causes, also, which hurt, prick, cut, or are possessed of a corrosive Acrimony, as, also, acrid Medicines, those of a too heating Quality, and refrigerating, pinguious, and inspissating Substances, are possessed of a singular Power, not only of impairing, but, also, of destroying, the Tone of this Integument. But when this Tone is changed and destroyed, the salutary Excretion of Perspiration through the small Orifices of this Strainer, must, at the same time, be greatly injured.

When, therefore, the vascular and fibrous Texture of the Skin is injured, and its Tone, by the Assistance of which the excrementitious Matter is eliminated by Exhalation, and laudable Juices restored, is destroyed, a bad Disposition and Weakness are induced, and more firmly take Possession of the Fibres; so that the impure Humours, easily conveyed thither, again act upon this weakened Part, and become stagnant. And certainly this preternatural Disposition of the Skin to produce such Stagnations, and the Difficulty of removing them, are sufficiently obvious from the Gutta Serena, which, by injuring and depraving the tender and tubulous Texture of the Skin in the Face, by a copious Congestion of Ichor, is not to be cured, and totally extirpated, without great Difficulty. Hence, since, by a frequent Approach of the purpuraceous Matter to the Skin, its Tone, Motion, Strength, and tubular Texture, are greatly changed and corrupted, it is not to be wondered at, if, the excrementitious Matter being again there collected, the same Disorder should again happen, and an Efflorescence of the Purples be produced.

Having thus explained what seemed necessary to point out the material Cause of both Species of the Purples, we now come to consider what Circumstances contribute, in a more remote manner, to the Generation of these Disorders. First, then, the Purples, especially of the chronical and protracted Kind, are most incident to those, who abound more with Serum than Blood, such as Infants, and Women of a spongy Habit, generally called *phlegmatic*; and the more the serous Humours discharged recede from their natural Purity, and mild Temperature, and the more sordid they are, the more difficult is the Cure, and the more dubious the Success, of the Disease.

It is, also, certain from Experience, that the Purples, both chronical and acute, as, also, malignant Miliary Fevers, are most incident to Women of weak and delicate Habits, to such as have their Strength impaired by violent Passions, especially long Grief, or by profuse Hæmorrhages during Abortion, or an Excess of the menstrual Discharge, or by a long-protracted previous Disorder; for, in such infirm and weak Habits, the lymphatic, mild, and nutritive Humours easily contract a foreign Nature and Taint, because, in consequence of the weakened Strength of the Solids, the Circulation of the Fluids is restored slower, and, the Secretions and Excretions being hindered, Crudities and Sordes are generated and accumulated in the Body.

But a Fever, accompanied with Miliary Purples, is principally incident, and often fatal, to Child-bed Women. This generally appears about the third Day after Labour, when the Milk Fever generally comes on; but it, also, sometimes seizes on the seventh, and sometimes on the fourteenth Day. In order to investigate the Causes of this Disorder, we are to overlook no Circumstance which can lead us to understand its Origin and Generation. Now it is certain from Experience, that poor Countrywomen of robust Constitutions, and accustomed to Exercise, are not in Child-bed seized with this Fever, whereas rich, tender Women, addicted to a sedentary Life, much Sleep, Luxury, and high Living, as, also, those, who are of delicate Constitutions, and such as are subject to tumultuous Passions and Commotions of Mind, are easily obnoxious to the Purples after Child-birth: And it seems to be true, that, as rich and easy Living, which, excluding hard and saline Aliments, consists of light Aliments, farinaceous Substances, light Cakes, Sweetmeats, fermentable Substances, Summer Fruits, and palatable Meats and Drinks, as, also, an impure, vapid Air, impregnated with sordid and putrid Exhalations, arising from adjacent Marshes and Standing-water, together with the Impurity of the Water, contribute greatly to the Generation of all Diseases, so they, in a particular manner, induce the Purples. From these Circumstances we are to deduce the Reasons, why this Disorder rages so much at *Leipsie*, which is situated low; and, on account of the adjacent Marshes, affected by an insalutary Air, whilst, at the same time, the Inhabitants live in a delicate and luxurious manner. For these Reasons, also, in *England* this Disorder first appeared in *London*, where the State of the Air, and the Method of Living, are the same; nor is it to be doubted, but that, elsewhere, Women, who live in the same manner, and in unhealthy Places, are frequently subject to this malignant Fever.

It is, also, observable, that pregnant Women, who are coactive, use a sedentary Life, and, neither in the middle nor last Months of their Gestation, diminish the Plenitude of the Vessels by Venesection, are, when in Child-bed, in a very bad Condition, and generally afflicted with the Purples: For, since almost all pregnant Women contain a Redundance of Blood, and since, by reason of the Distention and Relaxation of the Tone of the Vessels,

the Circulation of the Blood and Humours is slow, and the Evacuation of the Sordes, by Secretion and Excretion, scanty, they successively contract impure and peccant Humours; so, if improper Aliments are used, and the Elements necessary for the Support of Health, are peccant, a far greater Corruption is induced, insinuates itself into the internal Parts, and afterwards proves prejudicial to Health, and sometimes produces mortal Diseases.

The Purples, especially of the Miliary Kind, generally seize Child-bed Women, if, in the first Days after Labour, the Lochia are not duly discharged, but are either totally suppressed, flow too scantily, stop too slow, or are forthwith suppressed by a sudden Frigh; or the free Admission of Cold; for, in pregnant Women, by means of the Redundance of Blood and Humours, the vascular and cellular Texture of the Uterus is surprisingly distended and obstructed by the Congestion of the Humours; so that the Blood circulates slowly and with Difficulty there; and, not being totally consumed for the Nourishment of the Fœtus, stagnates in the uterine Vessels, and becomes thick and feculent, till at last, the Fœtus being excluded, the Lochial Blood is discharged from the Veins, by which the Placenta adhered to the Uterus. If, therefore, from a peccant Quality of the Blood itself, or a Defect of natural Strength, the corrupted Lochial Blood is not sufficiently evacuated, but, by an inverted Motion, passes into the larger Vessels, and is conveyed into the nobler Viscera, such as the Heart, Lungs, and Brain, it is not to be wonder'd at, that Fevers accompanied with a great Impurity and Corruption of the Serum, such as the Purples are, and other violent Symptoms complicated with them, should, by these means, be produc'd.

Besides, 'tis constantly observ'd in Practice, that Women, in consequence of an Obstruction of their Menstrues, are far more severely and frequently afflicted with Purples, both of the acute and chronical Kind, than Men; for the Uterus may be justly accounted the Source of this Disorder, since according to *Democritus*, in *Ep. de Nat. Hum. ad Hippocrat.* that Part is the Source of a thousand Woes to Woman; and the Purples rarely happen to Women, if their menstrual Discharge is regular, sufficient in Quantity, and continued for a due time; but, if otherwise, they are frequently afflicted with this Disorder. Hence 'tis certain from Experience, that Women who from advanced Age, or any other Cause, have their Menstrues totally suppress'd, labour under this Disorder longer than other Patients. Besides, if in young Women the Menstrues are not regular, or discharg'd too scantily, especially if other Causes concur, the Purples, accompanied with a Variety of Symptoms, are generally produc'd.

'Tis, also, certain from Experience, that Women subject to the Fluor Albus, when that Evacuation is too small, or check'd, or totally suppress'd, by improper Measures, have been seiz'd with the Purples; and, when these have been cur'd, the Fluor Albus has again appear'd; and, when this has been remov'd, the Purples have again succeeded. Hence 'tis sufficiently obvious, that this Exanthematous Disorder is the Off-spring of the Serum. Nor is it to be wonder'd at, if at present, when the Fluor Albus is more common than in former Ages, the Purples should, also, for that Reason be more frequent.

Though the immoderate Redundance of Blood in those in whom it is not lessened by the menstrual or hæmorrhoidal Discharge, or by stated Venesections, greatly contributes to the Generation, especially, of the chronical Purples; yet the Impurity of a copious Serum, arising from the Penury of laudable Blood, contributes still more to the Production of the same Disorder. It is, also, frequently observed, that by imprudent Venesection, or immoderate Hæmorrhages, in consequence of Abortion, especially with the Concurrence of a violent Frigh, or Anger, Refrigerations of the Extremities, Deliquiums, Inflations of the Stomach accompanied with Anxiety, an Oppression of the Breast, and an alternate Sense of Heat and Cold in the Surface of the Body, have been produced; which Symptoms, upon the Appearance of the Purples on the third or fourth Day, are mitigated, and allayed: For nothing more effectually destroys the Tone, Force, and Strength of the Solids; or has a more immediate Tendency to bring on a virulent Quality of the Fluids, already impure, than tumultuous Commotions of Mind, especially long-protracted Sorrow, and Grief. Hence, if pregnant Women, hysteric Patients, or those labouring under Irregularities of the Menstrues, are afflicted with violent Grief, it is a pretty sure Sign, that they will, in Child-bed, be seized with Purples of a bad Kind: Besides, Purples of a mild and benign Nature, in weak Habits, and such as are often under the Influence of enormous Passions, easily acquire a great Degree of Malignity, and portend the greatest Danger; and it is certain from Experience, that studious Men, and those addicted to a sedentary Life, after obstinate Grief, have contracted the Purples, and struggled under that Disorder for a long time.

A bad State of the Air, the Use of which is continually necessary to Life, and an irregular Constitution of the Weather, contribute greatly to the Production of the Purples; for as the Influence of the Air is very great, in perverting the State and

Crisis of the subtil, nervous, and membranous Fluids, and all the other Juices; so it is, also, of great Efficacy, in modifying and altering the Tone of the Skin, and the salutary Excretion of Perspiration: So that it is not to be doubted, but epidemical Diseases, and Purples, more or less malignant, are produced by the Impurity of the Air. Thus, some Years ago, the Purples, accompanied with a catarrhus Fever, raged epidemically, especially among the Children of the *Lower Saxony*; and this Disorder derived its Origin from a previous, long-continued, cloudy, and rainy State of the Weather, succeeded by cold easterly and northerly Winds; as we are informed by *Boettigerus*, in his *Dissert. de Purpura rubra epidemica*. In *Miscellan. Nat. Curios.* Dec. 1. An. 6. we are told, that, in the Spring succeeding an open and cloudy Winter, a malignant Purple Fever arose, which, through the whole Spring, had its epidemical Circuits, and was principally incident and fatal to Children. An impure Air, impregnated with foreign and active Exhalations, is, also, the Cause why this Disorder is not only more easily generated, but, also, more obstinately supported, in some Places, than in others. Thus, in large Towns, where the Air is impure, Persons seized with the Purples are often cured by removing to more salutary Places; and again afflicted with the same Disorder, upon their Return to such Towns, and staying in them for some time. Hence the Reason is to be deduced, why the Months of *March* and *April* so much favour the Production of catarrhus, exanthematous, and purple Fevers; for during these Months the Weather is generally heavy, rough, and changeable, whilst the Atmosphere is impregnated and contaminated with noxious Exhalations, arising from the Rains, and melted Snow.

We have already considered the principal Causes, which, especially in chronical Purples, have a great Affinity with those which generate the Scurvy; for, in this last-mentioned Disorder, there is an acrid, saline, and sulphureous Dyscrasy of the Blood, which, in the Purples, is only more exalted, and subtil. The Generation of the Purples is promoted by a lax Habit of Body, long Disorders of Mind, Obstructions of the natural Secretions and Excretions, a vapid Intemperature of the Air, moist and low-situated Places, improper Aliments, and those of hard Digestion, a Defect or a Redundance of Blood, and other Things of a like Nature. Hence a difficult Question arises, which is, Why, tho' all the Circumstances requisite to the Production of the Purples were present, this Disorder only began lately to appear. In deciding this perplexing Question, it must necessarily be acknowledged, that the same Disorder must have the same common Cause: Now we have already shewn, that in the Purples, especially of the chronical Kind, there is an impure, saline, and excrementitious Serum; that in the miliary Purples there is a Redundance of putrid, vapid, and acrid Serum; and that this Matter, contained in the Blood, whether acid, or acrid and saline, by the hot intestine Motion, acquires a worse Nature, so as violently to affect and irritate the nervous Parts, and, at last, to produce this Exanthematous Fever, accompanied with violent Symptoms. We must, therefore, direct our Views to other Circumstances, and consider whether, in Diet and Regimen, which afford the Matter, Temperature, and Intemperature, of the vital Humours, there is not some Error, which about forty, and some more Years ago, was unknown, or, at least, not so universally practised. This Error, therefore, is the almost universal Use, or rather Abuse, of warm Liquors, and especially of Coffee and Tea; for in some Parts, especially in *Germany* and *England*, Women of all Conditions use this Liquor, both in the Morning and Afternoon; and think it unpolite to send their Neighbours away without drinking large Quantities of it: And it is observable, that the Purples reign and increase most, since the drinking of these Liquors became so customary, and especially in those Places where it is most frequently used.

Though this Observation is so supported by Experience, that it cannot be doubted; yet its Truth may possibly seem to be weakened by this, that though in the hot *Asiatic* Countries Coffee is much used, the Purples are yet unknown in those Climates. But this seemingly specious Objection falls to the Ground, if we carefully consider, that in these Places the Regimen is quite different from what it is in ours; that their Inhabitants do not use coarse, hard, and salted Aliments; that the Air is purer and hotter, and Perspiration more copiously and expeditiously carried on; and, which is of all other Circumstances of the greatest Importance, that the Inhabitants have no scorbutic Taint in their Blood; for that a scorbutic and impure State of the Humours is to be class'd among the Causes which contribute to the Generation of the Purples, is sufficiently obvious from this, that the Purples rage most in Places most infested with the Scurvy, such as *England*, *Holland*, *Sweden*, and *Germany*: Hence the Disorder is called the scorbutic habitual Purples. It is, also, observable, that where the Purples already rage, and afflict the Inhabitants, the scorbutic lacerating Pains of the Limbs, the malignant Ulcers, the putrid

and bloody Gums, the broad and livid Spots, which are the essential and peculiar Symptoms of a Scurvy, are rarely afterwards observed; or, at least, they are less frequent and violent, as we shall afterwards shew.

As, therefore, these Things which happen in other Climates, under another Regimen and Constitution of Body, cannot be transferred and accommodated to the Situation of *Europeans*; so this Subject will be more perspicuous, if, from this Source, we explain the Method in which the Purples are generated. Now it is sufficiently known, that the excrementitious Impurities of all Kinds, separated from the Blood and Humours, especially the bilious Sordes, and the fermentable Juice of a salival Nature, supplied from the pancreatic Glands, as, also, the mucid Humours secreted from the Blood, principally in the large Intestines, fall down into the Intestines: It is, also, certain, that in this winding Canal Feculences are produced, from Aliments of various Kinds, such as improper Acids, fermentable and half-corrupted Substances, and Fish; and that these Feculences, when mixed and collected, ought to be discharged by Stool, as unfriendly and prejudicial to the vital Fluids. Whatever Things, therefore, hinder the Discharge of these Sordes, and occasion their again entering the Mass of Blood, certainly greatly contribute to render the Blood impure, by conveying into it these Sordes, which may be along with it propelled to the Emunc-tory of the Skin; tho' they cannot, like the Matter of the Sweat, be quickly dissipated; but, on account of their acrid Nature, destroy the sensible Skin, and, lodging there, form Spots, or Pustules: For it is daily observed, that if cachectic and scorbutic Patients are costive, Pustules, a Gutta rosacea, and ulcerous Defecations of the Skin, are produced. It is, also, observable, that, in acute and burning Fevers, Costiveness is succeeded by the Purples; whereas those who in the Decline of such Fevers have a critical Flux, are not seized with this fatal Exanthematous Disorder.

Now, upon an accurate Inquiry, we find it confirm'd, by Experience, that all warm Liquors, Tea, as well as Coffee, by increasing Perspiration, and provoking Sweat, render most Persons costive; and that violent Fluxes are stopped by Sudorifics, exhibited with a proper Regimen, and drinking some warm Infusion. Hence, if Persons whose *Primæ Viæ* are loaded with Impurities and Crudities, which ought to be eliminated by Stool, frequently use large Quantities of Coffee or Tea, it is not to be wonder'd at, if the bilious, saline, and sulphureous Sordes, being attenuated by the Heat, and afresh dissolved with an aqueous Liquor, should return through the lacteal and lymphatic Vessels, which every-where occur in the large Intestines, to the Mass of Blood, where, by reason of their Continuance and Commixture, acquiring a worse Nature, they induce a foreign and hurtful Intemperature of all the Fluids; unless, by covering the Body well, or by the Advantages of a warm and temperate Atmosphere, they are duly and quickly eliminated by Perspiration. Hence we infer, that all Persons, whether Men or Women, who are costive, and drink these warm Liquors, especially Coffee, whilst the Skin, at the same time, does not duly transmit the Sordes, receive great Injury from such Liquors; since, in such a Case, they greatly dispose to the Generation of the Purples, especially if there is a previous scorbutic Disposition of the Humours; or if the Patient is under the Influence of violent Passions, especially long-protracted Sorrow and Anger, which greatly favour the Accumulation of bilious Sordes in the *Primæ Viæ*. On the contrary, these Liquors are not only harmless, but salutary, to those whose Bodies they render soluble, and who are disposed to Perspiration; for, in such Persons, they contribute to the Elimination of Sordes of various Kinds.

Besides, Coffee-berries, the Product of another Climate, contain something of a foreign Quality, unfriendly to the natural Temperature and mild Mixture of the Blood in our Parts of the World; and in burning these Berries, especially in a strong manner, which is usual, they contract something of a saline, volatile, and empyreumatic Sulphur, which is unfriendly to the Tone and Motion of the nervous Parts. Hence it happens, that in some the drinking of Coffee produces a Tremor of the Hands, and Anxiety; and these Effects are produced the more, the more the Water is inspissated by the Powder of the Berries much burnt. Besides, in this Liquor much Sugar is used, which, lodging in the Intestines, and not finding an immediate Discharge by Stool, ferments, and increases the mucous and acid Crudities. From what has been said, it is not to be wondered at, if, by the common Abuse of Coffee, the natural Mixture and Crisis of the constituent Parts of the Blood are greatly changed, and a foreign State of the Fluids induced; which, being conveyed to the Infants in the Uterus, along with the Blood, lays a Foundation for the Purples.

Though this Doctrine, with respect to the Origin of the Purples, seems to be overthrown by an Assertion of *Welschius*, in *Dissert. de Purpura Lips.* that this Disorder was known at

Lipsic

Leipsic above sixty Years ago, when the drinking Tea and Coffee was not used; yet it will be found not to be subverted by this means, when we assert, that warm Liquors, especially Coffee, do not concur materially, but rather formally, to the Generation of the Purples; whilst, by the frequent Use of such warm Liquors, the Impurities of the *Primæ Viæ*, in consequence of the Patient being rendered costive, insinuate themselves into the Blood. Besides, if we carefully attend to the Living, Diet, and Regimen, used by pregnant and Child-bed Women at *Leipsic*, at the Time this Disorder appear'd, we shall find, that it proceeded from the Cause assign'd; for it is certain, that the Women of that Town are much addicted to Pleasure, lead an idle Life, indulge themselves in sleeping long, and almost daily use Sweetmeats, Summer Fruits, and farinaceous Substances, fried with Butter and Sugar; in consequence of which, they are costive, and, during their Pregnancy, collect a Redundance of Impurities: For which Reason they are frequently afflicted with the Fluor Albus. It was at that Time, also, customary, not only to confine Child-bed Women closely to Bed, but, also, as it were, to macerate them in warm Rooms; and, during the first Days of Child-bed, to exhibit only boiling-hot Broths, and Drinks; whilst they did not venture to remove the costive State of the Patient, by a Clyster, or Laxative; nor to use Venesection upon a Suppression of the Lochia. Any one who duly considers these Things, and compares them with what has been already said, must readily perceive, that such Management was the Cause why, at *Leipsic*, this Exanthematous Disorder appear'd before the Use of Coffee. This was, also, afterwards confirm'd by Experience; for after they discarded the hot Regimen, with respect to Child-bed Women, and admitted the Use of Laxatives and Venesection, the Purples became far less frequent, less dangerous and fatal. Though, therefore, the Use of Coffee cannot be accused of generating the Purples in *Leipsic*; yet it cannot be denied, that the Purples, which for a Tract of Years were confined to that Town, upon the Introduction of Coffee appeared elsewhere: So that the more this Liquor was used, the more this Disorder raged, and spread itself; and, which was a singular Circumstance not before observ'd, it generally associated itself with acute Fevers.

These Things are sufficient to demonstrate, that warm Liquors contribute to the Generation of the Purples, or the Conversion of the Scurvy into the Purples. But this Doctrine will be farther illustrated by the following Observation: The City of *Hall*, in *Germany*, both on account of its low Situation, and the adjacent stagnant and saline Waters, which emit large Quantities of aqueous Vapours, is surrounded with a moist Atmosphere; for which Reason it appears all beset with Clouds, to a Person who views it at a Distance. Hence the Reason is to be deduced, why, from the remotest Times, the Scurvy has raged in this City, so that the Inhabitants are frequently afflicted with the wandering Gout which they call scorbutic, Colics, Tumors, and scorbutic Spots; together with other Symptoms peculiar to the Scurvy; especially the various Disorders of the Gums. This I learned, when young, partly from my Father, and partly from other Physicians of that Town, who hardly prescribed any Medicine in which there was not some antiscorbutic Ingredient. And I myself, in my future Practice, observed the same Method with those who committed themselves to my Care, whose Disorders, on account of a scorbutic State of the Humours, I happily removed by Antiscorbutics. But, as soon as the Inhabitants began to use warm Liquors, especially Coffee, the Scurvy disappeared, and the Purples, both of the malignant and benign chronic Kind, began to rage, and proved very fatal at first, when the Nature of the Disorder was unknown. The same Effects were afterwards produced, by the same Causes, in *East Friseland*; so that it is not to be doubted but the Scurvy lays a Foundation for the Purples.

The Scurvy is, also, frequently converted into the Purples, by means of a Regimen, or particular Choice of Aliments, which our Forefathers used, either not at all, or but moderately; for in our Days most Men, addicted to Idleness and Luxury, think of nothing but gratifying their Palates by Variety of new-invented Dishes: Besides, not content with the various Products of their own Country, they are foolishly fond of Substances brought, through dangerous Seas, from the remotest Parts of the *Indies*. Though I do not absolutely condemn exotic Aliments, yet I must find fault with the modern Taste, which relishes none but somewhat acid and gently-pungent Food; which must, consequently, be prepared with large Quantities of Salt, Aromatics, Garlick, Onions, Pepper, and the various Kinds of Funguses: For such Aliments, by imparting a grateful Acrimony to the Tongue, partly make Persons eat too liberally, and, by that means, produce a Redundance of Crudities in the *Primæ Viæ*, just as scorbutic Persons do, by the Use of coarse Aliments; and partly procure a greater Effervescence of the Blood; which greatly contribute to the copious

Generation of saline and sulphureous Particles: So that, with the Concurrence of other Causes, the Purples are easily produced. Besides, the Use of spirituous Wines is at present so frequent, that in some almost the whole Mass of Blood is, as it were, converted into Wine.

To this Luxury in eating and drinking it is to be ascribed, that various Hæmorrhages, especially the hæmorrhoidal Discharge, are so familiar to many. Hence some Physicians, being misled, derive the Origin of all chronic Diseases in Women from an undue Discharge of the Menses; and in Men, from a Suppression of the Hæmorrhoids: For which Reason, if such Disorders happen, they order the whole Intention of Cure to be directed to reduce these Evacuations to due Order; and, particularly, frequently, or even every other Day, exhibit Pills made after the manner of the *Pilulæ Becherianæ*, with a small Quantity of Aloes. But though this Hypothesis is less agreeable to Truth, yet I shall not hesitate to affirm, that the frequent Use of these Pills, in other respects safe enough, in some Persons greatly contributes to the Generation of the Purples; for if there is no natural Propensity to any Excretion of Blood, especially by the hæmorrhoidal Veins, it must necessarily happen, that by these means the Mass of Blood must be exagitated, and thrown into Commotions, and, by an Increase of the intestine Motion, a greater Quantity of saline and sulphureous Particles produced, which are the material Cause of the Purples: Soon after, all the Circumstances concur which accumulate the saline and sulphureous Parts of the Blood, render them more acrid, and fix them deeper in the Fibrils of the Skin. Hence it is not to be wondered at, that the Scurvy, which is a false Disorder, changing its Nature, should degenerate into another Disease, such as the Purples.

Though we have intermixed the Prognostics of both Species of the Purples with the History of the Disease; yet we shall subjoin some Things with respect to the chronic Purples. Since, then, this Disorder is not accompanied with a Fever, it is not dangerous, unless when cured in a preposterous manner: It is, however, an obstinate Disorder, and generally creates great Trouble both to the Patient, and the Physician; for if the Fomes of the Purples fixes its Seat in the solid or internal Parts, it does not easily quit the Body, but, remaining within, generates violent Disorders; if, on the contrary, it is too impetuously expelled, it produces no less terrible Misfortunes. But this principally happens to those who have weak nervous Systems; or who, in consequence of an unequal Circulation of the Blood and Humours, are disposed to spasmodic Strictures; by which it happens, that a Redundance of impure Blood is with Impetuosity and Danger congested sometimes in the Head, sometimes in the Breast, and at other times in the Joints; by which means, a Train of violent Symptoms is excited: For if the Matter of the Purples retained in the Habit is conveyed to the Head, it produces Cephalalgias, Ringing of the Ears, Weakness of Memory, an Aphony, and sometimes Madness, apoplectic Fits, and Lethargies. If it is conveyed to the sensible Membranes of the Lungs and Diaphragm, it produces spasmodic Asthmas, and pungent lancinating Pains of the Breast. If it is deposited on the Membranes of the Stomach, Anxieties of the Præcordia, and Cardialgias, arise: If it seizes the Intestines, it produces Gripes, and Inflations of the Hypochondria, accompanied with an uneasy Sensation of Heat: If it is lodged in the Joints, they are distorted by cruel and lancinating Contractions: And, lastly, if the malignant Matter acts upon the tendinous and nervous Ligaments of the Hip, ischiadic Pains are produced. But all these cruel Symptoms lay aside their Virulence, and become milder, when the acrid caustic Matter is expelled to the Surface of the Body.

THE METHOD OF CURE.

For preventing a Return of the Purples, whether of the chronic, or of the acute and miliary Kind, nothing is more effectual, than Abstinence from all kinds of Malt Liquors, which are improper in this Disorder; since all of them, when old, contract an Acidity, and become too spirituous; and, when recent, are not only seculent and fermentative, but, also, contain coarse and mucid nutritive Parts: But all such Substances are so far from promoting, that they rather obstruct the Depuration of the Blood and Lymph, on which, however, the Whole, both of the Prevention, and of the Cure, depends. Hence, in hot and Summer Weather, I advise the Use of temperate mineral Waters, such as the *Selteran Springs*, and those of *Wildungen*, mixed with a small Quantity of Wine; but in the Winter, and to such Persons as could not procure such medicinal Waters, I have ordered, for common Drink, either pure Spring-water, or Decoctions of the Roots of *Vipers-grass*, *Sarsaparilla* and *Succory*, Shavings of *Hartshorn*, and clean *Barley*, with the Addition of a few *Fennel-seeds*; taking a Pint of Water for every Ounce of the Ingredients, adding a little Wine, if the Patient's Situation can afford it. I have, also, on ac-

count

count of Custom, permitted the Use of small and well-defecated Beer, in some Cases.

In Purples of the Chronical Kind, I order Exercise, Traveling, and Change of Air, by removing from low to higher Places, Diversion, and Tranquillity of Mind, a Freedom from Care, and profound Meditations: I, also, prohibit the Use of all such Things as render the Patient collive, obstruct Perspiration, and generate a Redundance of Blood. Nor is the Patient liberally to use Flesh, especially Pork; nor Aliments highly peppered, or prepared with aromatic Substances. In the Summer Months I have ordered the Cure to be totally performed by Asses Milk alone, or Whey of Cows, or Goats Milk, or by the *Selteran* Waters, mixed with a third Part of Cows or Goats Milk, and drank for a Month, or six Weeks, interposing, now-and-then, a Bath of sweet Water, or of the *Lauchstad* Springs. And this Method, if the Disorder has been deep-rooted, I have ordered to be persisted in for three Years. In some Men, of corpulent Habits, I have, also, ordered the Use of the *Sedlitz* Waters; by a moderate Draught of which, for seven or eight Days, in the Spring and Autumn, the Forces of the Disease has been carried off by Stool. I have, also, ordered many, afflicted with chronical, scorbutic, and habitual Purples, to drink the Waters of *Lauchstad*, by which the Sordes were copiously eliminated, the Patient continuing the Use of them, till their purgative Effects ceased.

When the Chronical Purples have been produced by a Disorder of the Uterus, and an irregular Discharge of the Menses, my principal Intention has been, to restore these to their natural State; for which Purpose, besides the Measures already prescribed, I have ordered the Powder of Rhubarb, the Elixir viscerale, and washing of the Feet, to be daily used, a few Days before the menstrual Eruption. But if, as it generally happens, they are accompanied with spasmodic Strictures, an Inflation of the Stomach, Anxieties of the Præcordia, and Pains of the Back, I have used Antispasmodics; such as the *Pulvis Marshionis*, mixed with a little Nitre and Cinnabar, a Grain or two of Castor, and of the Extract of Saffron: This Intention is, also, answered by the anodyne mineral Liquor, mixed with the Essences of Castor and Saffron, and the bezoardic Liquor. The Patient must, also, use Baths of sweet Water and Milk. In order to provoke the Menses, I have ordered weak Essence of Amber, extracted with an alkaline Liquor, by which means the Disorder was removed. In order to prevent the chronical Purples in plethoric Persons not subject to the Hemorrhoids, Scarifications and Venesections are of great Efficacy for diminishing the Redundance of Blood; as, also, repeated Purgings, which may be most commodiously obtained by a Solution of Manna, which is in a peculiar manner adapted to Diseases arising from a saline Acrimony, adding to the Solution a saline Stimulus; such as the *Terra foliata Tartari*. The Night-sweats, also, with which these disposed to the Purples are often much infested, I have happily removed, by frequent Purgings, brought on by gentle Laxatives; such as Raisins, Rhubarb, the *Terra foliata Tartari*, and Cream of Tartar.

In the Cure of the chronical Purples, I order, that from the very Beginning of the Disorder the Patient should not be kept in too hot a Bed, or Room, but in a moderate Heat, lying as little in Bed as possible; by which means, I have found the troublesome Sweats prevented. Besides the above-mentioned Decoction for ordinary Drink, I have found no Medicine produce better Effects than a diaphoretic nervous Powder prepared of Hartshorn, both calcined and not calcined, Crabs-eyes, Mother of Pearl, Amber, purified Nitre, and Cinnabar. I have, also, observed excellent Effects produced by the anodyne mineral Liquor; so that by these two Medicines, exhibited in proper Doses, either in Conjunction, or separately, without the Use of any other Remedy, I have happily cured Purples, both of the acute and chronical Kind.

We now proceed to the Method of preventing and curing that bad Species of Purples generally incident to Child-bed Women in the Beginning, or about the Middle, of their lying-in. The Cause and Origin of this we have already derived from the improper Regimen of pregnant Women, and Errors committed with respect to their Diet; for which Reason these are carefully to be guarded against. In order, therefore, to prevent the Purples in Child-bed Women, the first Intention to be pursued is, to take care, that, during Pregnancy, a Redundance of Humours, and much more an Impurity of them from their Stagnation about the Uterus, be prevented, and no Weakness induced on the nervous System. This Effect, if the Body is turgid with Blood, can in no manner be better obtain'd, than by Venesection three or four times, though not very copiously, performed in the superior Parts of the Body. The Patient must, also, abstain from Idleness, long Sleep, Commotions of Mind, Sweetmeats, fermentable and farinaceous Aliments; but she is to use Aliments of a laudable Juice, and a pretty large Quantity of some salutary Drink: She is, also, to use moderate Ex-

ercise, and keep her Body soluble, rather by Aliments, than Medicines; exhibiting Raisins impregnated with Rhubarb, and prepared with or without Manna; for these are of singular Service to pregnant Women. And since Refrigerations of the Lower Belly are considerably troublesome to pregnant Women, and have a Tendency to generate violent Disorders, I always advise them to fortify their inferior Parts against the Cold; and, for that Purpose, to wear Drawers. In order, also, to prevent noxious Stagnations of the Humours about the Uterus, it is expedient, sometimes, especially after the middle of Gestation, to anoint and rub the Abdomen, before a warm Fire, with the *Balsamum Embryonum*, or with old generous *Hungarian* or *Rhenish* Wine, made hot, dropping a few Drops of the Balsam of Life into it: And these Measures are carefully to be taken during Gestation.

We shall now inquire, what Measures are to be taken before and after the Labour, and during the first Days of lying-in, in order to hinder Women from falling into violent Disorders, and the Purples, both of the acute and chronical Kind. As, therefore, this Disorder is easily produced, and Women weakened, by the imprudent Management of Midwives, who before the due Time solicit the Pains, and for that Purpose exhibit hot and spirituous Substances, I injoin great Moderation, with respect to every thing, lest the Strength should be impair'd, the whole Mass of Humours surprisngly exagitated by the violent Pains, and the Use of Analeptics, and the seculent impure Humours about the Uterus put into a more violent Motion; but the Discharge of the Lochia, and other Excretions, are to be duly promoted, that the Disposition to Diseases may be as little as possible.

The second Day after the Delivery, when all the Pains are over, it is necessary the impure Blood, collected in the Uterus during Gestation, should be evacuated, and the vital Juices freed from the Cacoehymy they have contracted. Hence the Excretions of all Kinds, especially those by Stool and Perspiration, are gradually, but not impetuously, to be promoted, and carried on; which may be most commodiously done by the following means: Let the Patient carefully avoid the excessive Heat, either of the Bed, or Fire; and let her Drink be neither too hot, nor cold, but tepid. Let her guard against all Commotions of Mind, especially Dread and Sorrow; let her, also, every other Day, for four times, take balsamic corroborative Pills; such as those of *Becher* or *Stahl*; for these not only evacuate the Sordes by Stool, but, also, provoke a Discharge of the Lochia, and bring on a Diaphoresis. But if, at the Beginning, all the Symptoms are not allayed, but a Quickness of the Pulse, and an external Heat, are perceived, these Pills may be mixed with a precipitating absorbent Powder, which, for a Dose, may contain four or five Grains of Nitre. In such a Situation it is, also, expedient, in weak Broth, to take such Medicines as allay the Spasms, resolve the grumous coagulated Blood, and procure a free Dissipation of the Sordes by Perspiration; which Intentions are excellently answered by *Sperma Ceti*, Oil of Sweet Almonds, Infusions of Elder-flowers, Chamomile-flowers, and the Tops of Yarrow, a temperate Essence of Orange-peel mixed with Essence of Saffron, the anodyne mineral Liquor, and the bezoardic diaphoretic Powders, to be exhibited in some analeptic Water. A Mixture, also, of the analeptic and pectoral Waters, prepared with distilled Vinegar, Crabs-eyes, and Syrup of Sorrel, is of singular Service, in resolving the grumous and stagnant Blood.

By a due Observation of these Cautions, no mortal Disease will readily attack Child-bed Women, nor are the Purples to be dreaded: But if, in consequence of a Neglect of these Rules, the Corruption of the Serum and Lymph is so increased, as to dispose to the Purples, whether of the red or white Kind, or if these Disorders are already present, I use the following Method, which I have often found successful. After injoining an equal and temperate Regimen, with respect to Heat, I order Child-bed Women, seized with the Purples, to use Water-gruel, with or without an Infusion of common Chamomile; and this I have found of very great Efficacy. In the malignant and white Purples, I do not render the Body soluble by stimulating Medicines; nor is it expedient to produce that Effect by Clysters. I, also, forbid, as much as possible, all Change of Apparel and Bed-cloaths; but rather advise, that such as are already used, be put on, after having been well dried, and warmed before a Fire. I, also, dissuade an erect Posture, or Rising out of Bed; because, by these means, the Patients easily fall into Deliquiums; and, the Motion of the Humours being directed to the internal Parts, the Efflorescences disappear, and the most terrible Symptoms are brought on, as is shewn in *Fred. Hoffmanni Dissert. de Situ erecto in Morbis periculosus valde noxia*.

After the Eruption, I exhibit, at different times, about a Scruple, or half a Dram, of the temperate bezoardic Powders, to which I sometimes add, a small Quantity of Saffron, or Castor, interposing now-and-then a Dose of the anodyne

PUR

mineral Liquor, which is of singular Efficacy in allaying Spasms, quelling the hot intestine Motion, and correcting the Acrimony of the Humours: But, if, for various previous Causes, the Retrocession of the Purples is to be dreaded, or has already happened, I mix with the anodyne mineral Liquor, a fourth Part of the bezoardic Liquor, prepared according to the Directions of *Bussius*, and described in under the Article *Bussius*: Which Mixture excellently promotes a Diaphoresis, and forces the peccant Matter to the Surface of the Body. For restoring the Strength, which, in the White Purples, is greatly impaired, I recommend an analeptic Potion, prepared of the Waters of Baum, Citron-peel, the Flowers of Lilies of the Valley, Primroses, *Egyptian Thorn*, and Cinnamon. This Potion must be impregnated with Juice of Quinces, adding a sufficient Quantity of Mother of Pearl, and Pearl-sugar, dropping into it a few Drops of the *Spiritus Nitri dulcis*. In this Mixture, as a proper Vehicle, the Powders may be exhibited, or a Spoonful of it may be frequently taken by itself.

As it often happens, that in the Milk, or Purple Fever, the Lochia are suppressed, and, in consequence of a Congestion of Blood to the Head, mortal Symptoms produced, it is a Question whether, if the Lochia are totally suppressed, or not sufficiently discharged, if a Fever is present, and if the Purples are apprehended, Venesection may be safely and usefully used. In *Fred. Hoffman. Dissert. de Venesectionis prudenti Administrat.* 'tis shewn, that Venesection is sometimes highly beneficial in Exanthematous Fevers, even when the Efflorescences appear; and I can affirm, that by Venesection alone, proportioned to the Circumstances of the Patient, and performed either in the Foot or Arm, Child-bed Women at the very Gates of Death, and labouring under spasmodic Strictures, by which the Blood is impetuously forced to the Heart and Brain, have not only been preserved, but, also, received speedy Relief. Hence, if Child-bed Women die of a Suppression of the Lochia, we may justly ascribe the Cause of their Death to a Neglect of Venesection. Nor are there wanting celebrated Authors, who agree with me in this Opinion; such as *Willis de Febris*, Cap. 16. *Welschius, de Purpura Lips.* *Ralsinckius, Lib. de Ord. & Meth. Consult. Lib. 4. Sect. 2. Cap. 6.*

In both Species of Purples, whether benign or malignant, nothing is so prejudicial, or has such a direct Tendency to increase the Cause of the Disorder, heighten its Symptoms, and render it malignant, as an Excess either of Heat or Cold; for this, of all Disorders, can least bear Refrigeration, or excessive Heat, but, with respect to both, requires great Moderation: So that the Room in which the Patient lies, and the Air she breathes, are always to be kept in a due and equal Temperature; for, if the cold Air is freely admitted to the Surface of the Body; or if only the Arms, after being hot and moist in Bed, are stretched out, the whole Body is forthwith seized with Horror and Shivering; and, after great Anxiety and Languor, the Pustules disappear; and this happens more easily, and with the greater Danger, the warmer the Room is, or the more closely the Patient has been covered with a Load of Bed-cloaths. In like manner, in all Exanthematous Disorders, especially the Purples, nothing, especially in the Vigour of the Disease, is more prejudicial, than frequent changing the Degrees of Heat produced by the Fire in the Room, because the sudden Changes from hot to cold, and from cold to hot, violently affect the nervous and sensible Substance of the Skin, and surprisingly vary and disturb its Tone, Strength, and Motion; so that the Pustules either cannot appear, or, if they appear here-and-there, cannot long continue.

Great Injury is done to Persons labouring under the Purples, by an excessive Heat of the Room or Fire; as, also, by Heat raised by the Exhibition of hot Liquors, or Medicines of an heating Quality; since, by these means, all the Parts being agitated by a continual Heat, the Strength is not only impaired, and, the porous Substance of the Skin being too open, too great a Quantity of the Moisture dissipated, but the morbid Matter, by the hot intestine Motion, is, also, rendered more subtilo, penetrating, and acrimonious; so that the Itching, Heat, and Anxiety, are so far from being diminished, that they are increased. Hence we often observe, that the Symptoms are augmented, and rendered more dangerous, by drinking large Quantities of hot Tea, or any other Infusions, or by eating hot Aliments, or using hot Liquors.

Much less can the Purples bear the internal Use of heating Medicines, Wines, spirituous Liquors, sudorific and expelling Substances, bezoardic Tinctures, and Essences, together with Alexipharmics, since, by means of these, the Disorder is always augmented. Thus I have seen chronical Purples of a mild Nature, and free from a Fever, and violent Symptoms, by external Heat, the Use of Antiscorbutics, and purifying Decoctions, and a strict sudorific Regimen, converted into Purples of the malignant Kind; so that the Patient has afterwards

PUS

been afflicted with febrile Heat, a Loathing of Food, a Languor of the Strength, and a Want of Sleep. It has, also, been found from Experience, that the sooner and more impetuously the Purples are expelled by Medicines, and an hot Regimen, the more easily they are repelled to the internal Parts, by the slightest Cause.

Besides, in the Purples, excessive and liberal Purging is highly prejudicial; for so peculiar is the Nature of this Disease; that it admits neither too great Costiveness, nor too great Solubility of Body, much less artificial Evacuations by Stool: Hence, if the Patient is for a long time costive, the pent up Recrements are convey'd to the Surface of the Body; and the bilious, mucous, and fermentable Scorix, which ought, by means of the Liver, Pancreas, and glandular Coats of the Intestines, to be evacuated by Stool, are convey'd to the Skin; or, being collected, and mutually mixed, in the long and winding Canal of the Intestines, they are more corrupted by their Continuance there; and, being thence convey'd to the Mass of Blood, along with the chylous and nutritive Juices, lay a copious Foundation for the Disease, and the Increase of the morbid Matter. Hence, unless the Evacuation by Stool, and the other Excretions, are recalled and reduced to Order, the Disease is rarely perfectly cured, but either frequently returns, or is long protracted.

We are, also, to take care not to procure the Excretions, by acrid Stimulating Medicines; for which Reason we are carefully to abstain from all, even the mildest Emetics, all Purgatives and Laxatives, tho' destitute of Virulence, as, also, from all saline Substances; nor is it always safe to render the Body soluble by a Clyster, or Suppository, especially before, and a little after, the Eruption of the Pustules; for, the internal Parts being stimulated by this means, the Motion of the Fluids to the Surface of the Body is forthwith disturbed, the Perspiration obstructed, and the Pores of the Skin contracted, so that the Efflorescences disappear.

Unseasonable Venesection, also, contributes a great deal to the dangerous Retrocession of the Purples; for as in all Exanthematous Disorders, so especially in the Purples, it is of the greatest Importance, that the Blood should be in a due Quantity and Proportion, and that it should be convey'd to the Surface of the Body; for either an Excess, or a Defect, is attended with Danger. If the Quantity of Blood is too great, from the spasmodic Strictures of the Parts, fatal Congestions of the Blood in the nobler Parts are to be dreaded. But, if the Quantity of the Blood is too small, it cannot be forced to the most minute Vessels of the Skin, and the Organs destin'd for the Secretion of the Sweat; and the peccant Matter is less duly eliminated through this capillary Strainer, but with the greatest Danger remains immoveable in the internal Parts of the Body. Hence hardly any thing is more to be dreaded in this Disorder, than the Danger arising from unseasonable Venesection. I myself have frequently seen the Practice of some, who, in chronical Purples afflicting hypochondriac Patients, subject to spasmodic Strictures, advised Venesection, so unlucky, that, the Exanthematous Efflorescences ceasing suddenly, an apoplectic Fit was brought on. In Cases of this Nature, I have, also, known the most violent Contractions of the Joints, and almost fatal convulsive Motions of the Parts, brought on by ill-timed Venesection.

In the Miliary Fever, some advise Vesicatories, if the Disorder proceeds from an acid corrupted Lymph, that by this means the peccant Matter may be extracted, and, at the same time, the oppressed nervous Fibres stimulated to a stronger Contraction. Thus *Hamilton*, in his *Treatise de Febre Miliari*, highly extols the repeated Application of them to the Scapulae, in the following manner: "The Serosity of the Humours is excellently lessen'd by Vesicatories; for, by their means, the morbid Matter being in some measure lessened, Nature can more easily throw off the rest in the manner to which she is accustomed; so far are Vesicatories from hindering the Eruption of the Pustules." But, though this Method of affording Relief in the Pustules seems pretty consonant to Reason, yet, I confess, I never used it; and must, therefore, leave it to others to make Trial of it. *Frederic Hoffman.* See *MILIARIS FEBRIS*.

PURULENTIA. Purulence, or Suppuration.

PURULENTUS. Purulent, full of Pus, or Matter.

PUS. Matter. See *ANSCERUS*, *INFLAMMATIO*, and *SUPPURATIO*.

PUSCA. The same as *POSCA*. *Blancard.*

PUSILLATUM, or PUSULATUM. A coarse, or gross Powder.

PUSTA. A Digestion of Sanies. *Rulandus.*

PUSTULA. A Pustule. These principally appear in the Spring, and are of various Kinds; for sometimes a certain Roughness arises all over the Body, resembling that which is produced by the Application of a Nettle, or the Obstruction of Sweat,

P U T

Sweat, and are by the *Greeks* called *ἔξανθήματα*. These are sometimes red, and sometimes retain the natural Colour of the Skin; sometimes large Numbers of them appear of the Bulk of *Vari*, and sometimes larger. There are, also, Pustules of a livid, a pale, a black, or any other unnatural Colour, with an Humour contained in them. When these break, the subjacent Flesh appears, as it were, ulcerated. These are by the *Greeks* called *φλύκταιναι ἐλκώδεις*, and are produced by Cold, Fire, or Medicines.

But the *φλυζάκιον* (*Phlyzacion*) is a Species of Pustule, somewhat harder, whitish, and rising in a sharp Point. But Pustules are sometimes converted into small Ulcers, either moist or dry, sometimes accompanied only with an Itching, at other times with Inflammation and Pain; and a Pus, or Sanies, or both, are discharged. This happens principally in Children, rarely in the Trunk of the Body, but frequently in its Extremities.

The worst Species of Pustule is, that call'd *ἐπινοκτις*, which is generally of a somewhat livid, blackish, or even of a white Colour. Round about this Kind of Pustule, there is a violent Inflammation; and, when it is laid open, a mucous Exulceration of the same Colour, contained in the Pustule, is found within. The Pain accompanying it is far more intense than could be expected from its Bulk, which is no greater than that of a Bean. This Species of Pustule, also, arises on the Extremities of the Body, and generally in the Night-time; from which last Circumstance, the *Greeks* gave it the Name of *ἐπινοκτις*.

In the Cure of all Pustules, the first Step to be taken is, to use much Exercise and Walking; and, if these cannot be practis'd, Gestation is their best Succedaneum. The second Step is, to diminish the Quantity of Aliments, and abstain from all acid and extenuating Substances. The same Measures are to be taken with the Nurse, when a sucking Infant is affected with Pustules. Besides these Steps, when the Patients are robust, and the Pustules but small, they ought to sweat in a Bagnio, have Nitre sprinkled on the Pustules, and be anointed with a Mixture of Wine and Oil, after which they are to go into the Bath. If these Measures prove ineffectual, or if the Pustules are of a large Kind, Lentils are to be applied to them; and, when the Skin is removed, we are to have recourse to mild Medicines. After the Application of the Lentils, the *ἐπινοκτις* is commodiously cured by Knot-grass, or green Coriander.

Ulcers formed from Pustules are removed by Litharge mix'd with the Seeds of Fenugreek, adding Oil of Roses, and the Juice of Endive, till the Preparation is of the same Consistence with Honey. The Pustules of Infants are very properly anointed with the following Preparation:

Take of the Stone by the *Greeks* called *πυελίτης*, eight Drams; mix with fifty bitter Almonds; and add three Cyathi of Oil, in order to make an Ointment: Before the Use of which, however, the Pustules ought to be anointed with Cerufs. *Cels. Lib. 5. Cap. 28.*

PUTORIUS. The Pitchet. The Flesh of this Animal is said to be resolutive, externally applied.

PUTREDO, or PUTREFACTIO. Putrefaction.

The happy Influence of Natural Philosophy and Chymistry upon Medicine is in no Instance more palpably evinced, than in the Doctrine of Putrefaction; the great Importance of which in Medicine, and its Necessity to the Physician, we shall prove from several Arguments, after having investigated its Nature, Causes, and Effects, from physical and chymical Principles, that its Use, in the Application of things of a medicinal Nature, may be the more apparent. The Putrefaction, therefore, of a Body, is nothing but an intimate Dissolution of the Parts of which a Body consists, from their Union and Connection, accompanied with a volatile and fetid Exhalation, and changing the whole Crasis, Properties, and Qualities, of the mixed Body.

The Dissolution of Bodies is justly distinguishable into superficial and intimate, or radical. In the former, the Body is only divided into its most minute Parts, every one of which still retains its peculiar Nature, Virtues, and specific Qualities. Thus, in a Solution of Gold with Aqua Regia, though the Gold is resolved into highly minute Atoms, as is obvious from this, that a few Drops of such a Solution are capable of giving another Taste to a whole Pint of Spirit of Wine, yet by a Precipitation made by some Salt, either of the lixivial, or volatile Kind, these Particles, or Atoms, appear to have perfectly retained the Nature of Gold. But an intimate, or radical Solution is that, in which the Parts of a Body are so removed from their Situation, and so resolved from their intimate Mixture, on which the specific Differences of Bodies depend, that, being absolutely transformed into another Texture and Disposition, they assume new Qualities and Virtues. Thus, in the Solution of the Aliments in the Stomach and Intestines, by the subtle and universal salival Menstruum of the Stomach, and the Influence of the animal Heat, the intimate Mixture and

P U T

Texture of the Aliments are so destroy'd, that their Taste, Smell, Colour, Consistence, and other Qualities, being destroyed, they produce Chyle and Fæces. Thus, also, in the Fermentation of Vegetables, the sweet Juices of Grapes, and Summer Fruits, by means of Fermentation, lose their sweet and temperate Nature, and are either changed into an acid, spirituous, or a vinous intoxicating Liquor; among these intimate Solutions, we ought, also, to reckon Putrefaction, the Nature and Effects of which consist in extinguishing the Mixture, Form, Qualities, and Virtues of Bodies.

The Cause of this intimate Dissolution, whether of the fermentative, or putrid Kind, is an intestine Motion of the moist Parts, and a copious Influx of a hot and violently agitated Matter; for as there can never be a Solution of a solid Body without Moisture, so without Water, the original Fluid, there can neither be Fermentation nor Putrefaction; for Water is the universal Menstruum, which not only deeply insinuates itself into the Pores of Bodies, but, also, because its Parts are in a continual intestine Motion, is able to disjoin and remove from their Situation the Parts of Bodies, which are variously mixed and united: But it produces this Effect most happily, when assisted with Heat; which is no more than the rapid Motion of an ethereal and celestial Matter, furnish'd with a great expansive Power, propelling from the Centre to the Circumference. The Moisture, then, when acting on Matter capable of Fermentation and Putrefaction, resolves the saline, sulphureous, and earthy Parts, receives them into itself, and carries them off with it in its Motion.

But though both Fermentation, and Putrefaction, are produced by an intestine Motion of the Moisture, and of the hot Principle, yet their Effects are very different, since, by Fermentation, a sulphureous inflammable Spirit, but, by Putrefaction, a volatile urinous Spirit, is produced; for which Reason Putrefaction is always accompanied with a fetid Smell. 'Tis, also, to be observed, that the Juices of Animals admit of no Fermentation, nor can any vinous inflammable Spirit be prepared from them, since these are the Properties of Vegetables alone; which, however, are capable of Putrefaction, as well as the Juices of Animals. The Reason why Animals, and their Parts, are only capable of Putrefaction, but can never, by Fermentation, yield an inflammable Spirit, is only to be sought for in the different Mixtures of Animals and Vegetables, since these last admit into their Mixture not only an Oil, but, also, an Acid, which in Distillation is obtain'd from them; whereas in Animals no such thing is found, since they are rather impregnated with an Oil, and a subtle volatile Earth, which, by the Action of the Fire, becomes saltish. In the Fermentation, therefore, of Vegetables, by the warm intestine Motion the tartareous Acid is first dissolved, by which, when it begins to act on the sulphureous and oleous Parts, an Effervescence, in consequence of this mutual Action and Reaction, is not only excited, but, also, a copious penetrating Vapour is raised, and carried off in the Air; and, lastly, by the mutual Combination of acid and oleous Parts in the Acid, a spirituous or vinous Liquor is produced. But in Putrefaction, where the Acid is defective, the oleous, sulphureous, and saline volatile Principles are forthwith carried off; and, being neither fixed nor corrected by the Acid, are freely dissipated in the Air with a nauseous and fetid Smell; which, according to indisputable chymical Experiments, is produced by an oleous, or sulphureous Principle, and a volatile Salt. A palpable Instance of this we have in mineral Sulphur, which, in its native State, is without Smell; but, when fused over the Fire with a lixivial Salt, assumes an ungrateful Odour. If, therefore, we intend to obtain a volatile oleous Salt from Animals, we must either subject them to Putrefaction, or burn them with a strong Fire; by which means both their oleous and volatile Parts are freed from the Contexture of other Parts with which they were entangled.

We have already observed, that Moisture and Heat were the principal Instruments of Dissolution, both in Fermentation and Putrefaction; so that, without the former two, neither of these can be performed. Hence it follows, that a Body, which has otherwise a great Tendency to Putrefaction, cannot be more effectually preserved from it, and kept sound, than by removing Heat and Moisture. For this Reason, Bodies sufficiently dried are never observed to be subject to Putrefaction and Corruption. Pork and Beef dried by Smoke, and the Influence of the Air, do not easily become putrid: But, if, by Maceration in Water, they receive a due Degree of Moisture, they soon become putrid in a warm Air. Such, also, is the peculiar Nature of Cold, that it preserves Bodies from Putrefaction, for no other Reason, than that by a certain rectilinear Motion it presses and conjoins the Parts, so that they are not easily disjoined, and put out of their Situation; whereas Heat, by its vertical Motion round its own Axis, expands and enlarges the Pores, and propels the Parts from the Centre to the Circumference.

But

PUT

But as there are various ways of removing Moisture, or Humidity, so there are as many Methods of preserving Bodies from Putrefaction. Thus 'tis certain from Experience, that highly rectified Spirit of Wine is very proper for preserving Bodies from Putrefaction, when kept in it, because it quickly imbibes and absorbs the Moisture of Vegetables and Animals from their internal Pores and Parts. Hence Bodies, before soft, are indurated: But the Experiment succeeds more happily, if fresh dephlegmated Spirit is frequently pour'd to them. And though by means of distil'd Oils, and liquid Balsams, the Embalming and Preservation of Bodies from Putrefaction may be obtained; yet highly rectified Spirit of Wine is far preferable to them all, because it is of a more penetrating Nature, and more easily enters the internal Parts of the Bodies, than resinous balsamic Substances.

There is, also, another Method of preserving Bodies from Corruption, which is by Salts, the most considerable of which are common Salt and Alum, which excellently imbibe the Moisture, by the Absorption of which the fleshy Fibres are rendered harder. The more pure and dry these Salts are, the more happily they produce this Effect. And as Alum, in consequence of its large Number of terrestrial Particles, is of an astringent Quality, by which the Parts are more intimately united and connected with each other, so by means of a Lixivium prepared of Alum, and common Salt, all the Viscera of the human Body may for several Years be preserved entire.

'Tis to be observed, that corruptible Fluids, if agitated with a continual Motion, do not easily become putrid; but that stagnant and putrescent Fluids, such as are observed in Marshes, are easily susceptible of Corruption: For Heat and Moisture, continually acting upon quiescent Particles, more easily dissolve and destroy their Mixture, than if they perpetually changed their Place and Situation, in which case the Action and Change of Heat is more transitory; whereas, in quiescent Particles, it is more durable and permanent. We, also, observe, that Vegetables abounding with Moisture, and collected in a large Heap, become more easily warm and putrid, than when they are scattered; in which Case, they remain free from Putrefaction: The Reason of which is this, that, when they are collected into an Heap, the Effluvia excited by the Motion of the Moisture, and the intestine Warmth, cannot be exhaled and dissipated in the Air; but, being pent up, and returning, as it were, on themselves, accelerate the intestine putredinous Motion, instead of diminishing it. But nothing more effectually prevents the Corruption of corruptible Bodies, and dissipates it when beginning, than the Access of a free Air, especially of the dry and cold Kind. 'Tis, also, to be carefully observed, that a beginning Putrefaction is of a very multiplying Nature, and diffuses itself very quickly; for it acts like Leaven, which quickly puts the homogeneous, and especially the most adjacent, Parts into the like putredinous Motion with itself; as we plainly see in fermentable Substances, where a little Leaven added to a farinaceous Mass, or the Juice of Vegetables, immediately throws them into the like fermentative Motion.

Having thus, from the Principles of Natural Philosophy and Medicine, investigated the Nature, Generation, and Effects of Putrefaction, it will be far more easy to apply what we have said to medicinal Purposes in the human Body, in which a singular and wonderful Phenomenon recurs to be explained, that is, why the Bodies of Animals, and the Juices contained in them, which in their own Nature are so prone to Putrefaction, when Moisture and Heat are present, do not, however, become putrid so long as the Animal is alive, but remain sound and entire; whereas they quickly become putrid after the Death of the Animal. And in this principally consists the Preservation of Life, the Causes of which ought to be carefully investigated by every Physician. Those are greatly deceived, who seek for the Cause of the Preservation in a certain vital Spirit, or Balsam, and the innate Heat, since, instead of specifying the true Causes, unmeaning Words which explain nothing, are only used. They are, also, no less deceived, who think that this Preservation is the Effect of the Salt and Sulphur contained in the vital Juices; for 'tis certain from Experience, that neither saline, nor spirituous Substances, nor balsamic Medicines, copiously exhibited, are of such Efficacy as to remove Putrefaction, since they rather contribute greatly to promote it; for we observe, that the Bodies of scorbutic Patients, whose Juices abound with saline and sulphureous Parts, easily fall into a sphacelous Corruption; so that other Causes must be assigned for this vital Duration, or Preservation. Now we observe, that so long as the Mass of Blood and Humours, of themselves very corruptible, is continually, by a progressive and circular Motion, carried through the vascular Structure of the Body, it remains free from Corruption; but so soon as these Humours, ceasing to move, or circulate, stop, or become stagnant, in the solid Parts, they soon become subject to Putrefaction, which immediately diffuses itself, and, spreading to the adjacent Parts, brings on a Mortification and Sphacelus of

PUT

them. Whenever, also, the Circulation of the Blood is totally removed, which happens in Death, Putrefaction immediately ensues, unless it is prevented by Cold, or some other external Cause.

Hence 'tis obvious, that the Circulation of the Blood is the Cause which defends the Bodies of Animals from Corruption; and so long as the Circulation is entire, the Body is free from all the Injuries of Putrefaction. But we must inquire, whether this Flux and Reflux of the Blood produces this Effect only by its progressive Motion, or whether other Causes, also, concur with it, which seems most probable; for, by means of this continual Circulation of the Blood, the hot intestine Motion of its constituent Parts is greatly increased, and the Juices not only consumed, but, also, gradually converted into a saline sulphureous Excrement. Hence 'tis obvious, that the Circulation has rather a Tendency to destroy than preserve the due Mixture of the Mass of Blood, as is obvious from the intense Heat of Fevers, where, in consequence of the brisk Circulation of the Blood, a greater intestine Agitation of the Parts is produced, and a more violent Heat excited, which not only consumes the Body, together with its Strength and Juices but, also, resolves these last into excrementitious Parts, which ought to be eliminated partly by Perspiration, and partly by Urine and Stool. Besides, with the Air, Aliments, and Drink, many Parts foreign to the Mixture of Blood, and highly subject to Corruption, are often mixed with the Blood; and, if these are retained in the Habit, they must naturally disturb and destroy the Nature and benign Mixture of the Blood. During the vital Action, and perpetual Motion, of the Fluids, we, also, observe, that a corruptible Matter fit for inducing Putrefaction, is generated in the Blood. Hence Reason dictates, that these Parts, so prejudicial to Life, by spoiling the due Crasis and Mixture of the Blood, should, with all Care, be separated, secreted, and eliminated from the Body.

Hence it is, that unerring Nature, in the curious Structure of Animals, has formed numberless secretory and excretory Organs; by means of which, not only the Excrements of a more fixed, but, also, of a more moveable, volatile, saline, sulphureous, aqueous, and aerial Nature, are continually and uninterruptedly separated from the Blood and vital Humours. This Purpose is excellently answer'd by that large Organ the Liver, which is continually employ'd in separating from the Blood the sulphureous Scoriae, together with the hot, saline, and serous Parts. There are, also, here-and-there in the Body, numberless conglomerate Glands, which consisting of infinitely small Tubes, continually secrete a subtile and highly fermentable Fluid of a salival Nature, which, having performed its Office, is eliminated from the Body. The Skin, also, being full of Tubes and Pores, is, as it were, an universal and common Emunctory, through which the serous, sulphureous, saline, and excrementitious Parts of the Humours are eliminated. The Kidneys are the Organs through which a saline, sulphureous, and thick Serum is strained; and through the large Intestines the feculent Sordes and Faeces are evacuated.

For, in order to preserve the due Mixture of the vital Fluids, 'tis not only requisite there should be a perpetual Separation of the superfluous Parts, but 'tis, also, necessary there should be another Preservative of Life and Health, not mentioned by modern Writers; which is a fresh Accession of mild and temperate Juices, in the room of the corrupted Fluids, eliminated from the Body. Hence we see the Reason, why Men, and brute Animals, in order to prevent internal Putrefaction, and preserve Life, ought constantly to have due Supplies of Aliments, from which laudable, temperate, sweet Juices, fit for nourishing and increasing the Strength, such as the chylous and lacteal Juices are, may be again generated; for, without such a new Accession and Afflux of fresh Juices, Life and Strength cannot be long preserved; so that Life is excellently preserved, and a mortal Putrefaction prevented, in the Bodies of Animals, by means of Aliments, and due Excretion. It must, also, be observed, that in Adults, who stand in no need of having the Parts of their Bodies farther increased, the Excretions ought, in order to a due and equable State of Health, to be equal to the Aliments taken.

This firm and unshaken Foundation of Health, consisting in this, that every Substance approaching to Corruption, and capable of inducing Death and Destruction, ought carefully and perpetually to be abstained from, furnishes us with various Corollaries and Theorems, of singular Use in Practice: For, first, from what has been said, we may deduce the Nature and immediate Cause of Death, and the Putrefaction which succeeds it, and in, in its own Nature, highly unfriendly to Life: The Cause, then, of these Effects is a destroyed Circulation of the Blood, and the Putrefaction and Corruption arising thence, which, on the contrary, is generally the Cause of the Destruction of the Circulation, and, consequently, of Death; for, from a careful Dissection of those who have died both of acute and

and chonical Disorders, the Causes of Death are always manifest and conspicuous; since one or more of the Viscera, or more noble Parts, appear corrupted, putrefied, or sphacelated, by an Extravasation or Stagnation of the Humours: But in those who die suddenly, or of violent acute Disorders, which are not to be known without Difficulty, polypose Concretions, consisting of various Fibres and Membranes, are frequently found in the large Vessels; especially in the Ventricles of the Heart, and the Sinuses of the Dura Mater; which, by obstructing the free Circulation of the Blood, destroy the Patient.

Since, therefore, the whole Business of the Physician consists in procuring long Life, preserving the Body sound, and preventing untimely Death, and the Disorders which bring it on, he certainly cannot, in a more effectual manner, answer these grand Intentions, than by preventing and removing Corruption and Putrefaction, both in the internal and external Parts. But this End cannot be better obtained, than by preserving a free Circulation of the Blood through all the Parts of the Body, and removing every Cause which may in the least obstruct and hinder it.

But several Causes are capable of disturbing and hindering this Circulation; the most considerable of which is, a Redundance of Blood and Humours, which, by its strong Resistance and Expansion, impairs the Elasticity of the Fibres of the Heart, and its Auricles, so that the Circulation becomes very slow and languid: And this Circumstance, unless soon removed, produces Stagnations of the Humours, Infarctions of the Viscera, Obstructions, Indurations, Extravasations of the Humours, and putridinous or apostematous Corruptions of the Parts. By this slow Circulation of the Blood and Humours, the Excretions are lessened, and particularly those made by Perspiration, and that of the bilious Humours, large Quantities of which are daily secreted in the Vessels of the Liver. Hence large Quantities of Impurities, of various Kinds, must necessarily be accumulated in the Mass of Blood.

But a Plethora so unfriendly to Health and Life is very incident to those, who, being of spongy Habits, live luxuriously, and indulge themselves in Ease and Quiet: But Women are still more disposed, than Men, to generate a larger Quantity of Blood than is necessary to Nutrition and Life. Left, therefore, this Redundance of Blood and Humours should injure Health, or threaten Death, the Structure of our Bodies is so artfully contrived, that the Vessels and nervous Parts have a peculiar Kind of Motion, by which they prevent Stagnations, and free themselves from the Load of redundant Blood, so unfriendly to Nature; in Childhood, generally by the Nose; in Women, by the Uterus; and in Men, by the hæmorrhoidal Discharge returning at stated Periods: When, therefore, the usual and salutary Excretions, destined for diminishing the redundant Blood, are, by any Cause, rendered defective, diminished, or violently suppressed, numberless Misfortunes are produced; and, unless Relief is soon afforded, the Body is rendered subject to Disorders of all Kinds, both of a chonical and acute Nature, as is shewn in *Medicin. rational. Fred. Hoffman. Tom. 2.* I have frequently seen plethoric Women, who, having their Menfes suppressed by a Fright, upon the Access of Cold, or the Use of a drastic Purgative, have soon after died of a sphacelous Corruption of the Parts; and immediately after Death, their Bodies became tumid, and were seized with an highly fetid Putrefaction, large Blisters rising here-and-there upon them.

From what has been said, any one may conceive, that Putrefaction and Death may be generated only by a Redundance of laudable Blood: In order to prevent which, no Remedies are more proper than Venesection, or a Restitution of the usual Excretions of Blood: But if any one is unaccustomed to Venesection, and naturally abhors it, and at the same time feeds and lives in such a manner as is fit for generating large Quantities of Blood, whilst Nature is slow, or absolutely defective, in carrying on the Excretions; such a Patient is to be treated in another manner, and great Care taken, lest he fall into some violent, or, perhaps, mortal Disorder, arising from Putrefaction: For, according to his peculiar Circumstances, such Things as lessen the Redundance of the Blood and Humours, are to be used; such as proper Exercise, Abstinence, light Drink and Aliments, Bathing, Laxatives, Infusions, and a due Use of the Mineral Waters, both of the hot and cold Kind.

It is, also, certain, that a mortal Putrefaction may be produced, by a Penury or Defect of Blood: For though it is seemingly most probable, that different Causes must produce different and dissimilar Effects; yet it is certain, from various Instances, that, in the human Body, contrary Causes may conspire in the Generation of the same Disease: But we shall now content ourselves with shewing, in what manner both a Redundance and Penury of Blood may induce a mortal Corruption on the Humours, and solid Parts. We have already observed, that the redundant Blood easily stagnates in the Vessels,

and soon becomes impure, in consequence of the Diminution, occasioned by a Plethora, of the Secretions and Excretions, which ought to free the Blood from impure Sordes, and excrementitious Matter, which have a great Tendency to Corruption: The same, in like manner, happens from a Defect of laudable Blood; for, as, by a natural and due Quantity of Blood, all the Vessels are kept open, so, in consequence of a Penury or Scarcity of it, they collapse, and have their Diameters lessened, or, perhaps, are at last totally blocked up: Hence the benign and nutritive Juices can neither be conveyed to the solid Parts, nor a sufficient Quantity of the nervous Fluid be generated in the Brain; by which means the Strength is greatly impaired. Besides, as the Impulse of the Blood, by the due Diastole of the Heart and Arteries, such as is observable in the Pulse, depends upon a sufficient Quantity of Blood, it must necessarily happen, that, under a Defect of this Fluid, the Pulse must become very weak and languid, whilst the Blood itself is not duly propelled through the minute capillary Vessels of the Viscera, but stagnates here-and-there in the Viscera; such as the Lungs, Spleen, and Liver: And this State is succeeded by Corruptions, Cachexies, slow and hectic Fevers.

Now there is not a nearer Way to Corruption, and the Disorders arising from it, than when, after the Strength is consumed, by violent Hæmorrhages, severe previous Diseases, long-continued Passions of the Mind, Grief, or Hunger, Persons voraciously eat large Quantities of Aliments, which, as they cannot be sufficiently digested, and the useful separated from the useless Parts, on account of the weak and languid Force of Nature, so they not only generate a large Quantity of peccant Humours in the *Primæ Viæ*, but the Vessels, also, in consequence of the obstructed Excretions, are filled with impure and corruptible Juices, and a great Disposition to malignant and putrid, or to slow and hectic Fevers is brought on; for it is certain from Experience, that terrible Camp Diseases, as malignant and petechial Fevers, the *Hungarian Fever*, Diarrhoeas, and malignant Dysenteries, afflict the Soldiers most, spread themselves farthest, and are most contagious, in the Autumn, and when they begin to leave the Camp, for no other Reason than that, during the Summer, under the long Heat, the Night-colds, the continual Fatigues and Watchings, or, perhaps, corrupted Aliments and Liquors, they have lost their Strength, and laudable Blood; instead of which they have their Veins and *Primæ Viæ*, stuffed with large Quantities of corrupted Juices, which are highly subject to Putrefaction, and, in acute Fevers, generally induce a mortal Sphacelus on the internal Parts.

Having thus considered the Cause of malignant Disorders, which is a Defect of laudable Blood and Juices, and a consequent easy Transition to Putrefaction, every thinking and judicious Physician must certainly perceive, that nothing is more dangerous than to exhibit too much Aliments, especially of bad Juices, to Persons weakened by Diseases, or any other Causes; since such Persons are, according to *Celsus*, highly subject to putrid Diseases: But it is better, in such a Case, gradually, and by little and little, to restore the consumed Blood, to eliminate the Crudities attending such a State, either by Perspiration or Stool, by means of gentle Evacuants; and then to corroborate the Digestion, and concoctive Power of the Stomach, by temperate, corroborating, and stomachic Medicines, by which means the violent Disorders, to be dreaded from a Corruption and Putrefaction of the Humours, may be excellently prevented.

There is, also, another expeditious Method of bringing on a mortal Putrefaction, in sound vigorous Persons, in the very Flower of their Age; which is by the Exhibition of Poisons, especially those of a caustic Quality, such as the three Species of sacitious Arsenic, highly acrid Purgatives, or drastic Emetics prepared of Antimony; for, unless the violent Operation of all these is soon stopt by proper Remedies, they quickly prove mortal, by inducing terrible Spasms of the nervous Parts, and a Putrefaction of the nobler Organs of Life. Upon dissecting Patients taken off by these means, sphacelous Spots of the Stomach and Intestines, accompanied with an intolerable Stench, present themselves to our View; for Poisons of this Kind, by constricting the nervous Parts, and Vessels of the Stomach, produce Inflammations, which degenerate into a Sphacelus, which is the more fatal to Life, because it seizes the nervous and membranous Parts, such as the Stomach and Intestines, which have an intimate Consent with those Parts, which are furnished with an exquisite Sensation, and a brisk lively Motion, and which they, also, draw into the like irregular Commotions: It is, also, observable, that cold Liquors drunk by a Person over-heated, and covered with a profuse Sweat, are highly prejudicial, and, in their Operation, frequently imitate Poisons, by quickly inducing a Sphacelus and Death: And though the Effect is not always so fatal, yet we have Instances in which cold Liquors, drunk by over-heated

Persons, have proved mortal; and, upon laying open their Bodies, their Viscera were found sphacelous. Thus, some Years ago, a young Man of eminent Distinction, in the Flower of his Age, being covered with a profuse Sweat, after violent Exercise, drank a large Quantity of cold Ale, at a Draught; in consequence of which, being seized with a great Languor, an Uneasiness about the Præcordia, a Desire of vomiting, and frequent Deliquiums, he died of Convulsions on the fourth Day; and, upon opening his Body, a Part of his Stomach was not only sphacelous, but his Spleen, and the Left Lobe of his Lungs, were found resolved into an highly fetid and putrid Mass, black as Ink: For as the Viscera consist almost entirely of a Congeries of highly minute Vessels, it is of course obvious, that they must readily be subject to Infarctions, and a Stagnation of Blood. When, therefore, a large Quantity of Liquor, actually cold, arrives at the Blood, which, in consequence of its Motion and Heat, is pretty thin and fluid, it is not surprising, that the Blood should be immediately coagulated, and, being firmly impacted in the Vessels, become putrid. In this Case there is not a more efficacious Remedy than speedy and seasonable Exercise and Motion, whether by riding on Horseback, or in a Chariot, after drinking a large Quantity of a warm Infusion of the Flowers of Daisies, common Chamomile, Carduus Benedictus, Paul's Betony, and Scordium; by which the Coagulation of the Fluids is prevented, and the free Circulation of the Blood, through the Vessels, promoted: Hence we see how simple, and yet how efficacious, the Remedies for preventing the most terrible of Deaths sometimes are.

Among the terrible Disorders arising from Putrefaction, we may justly class the *Morbus Niger* of Hippocrates; under which, Humours of a black Colour are not only vomited, but, also, highly fetid Excrements discharged by Stool. Here it is to be observed, that a Vomiting of bloody, or black, Matter rarely proves mortal; but if a large Quantity of Blood is, from the ruptured Veins of the Ileum, conveyed to the Fæces of the Colon, and is not immediately discharged, but, stagnating, is put into a putrid Motion with the Fæces, accompanied with an highly fetid Smell, it soon kills the Patient: For, in my Opinion, those who die of this Disorder are not so much destroyed by the Effusion of Blood, which is not sufficient to destroy Life, as by the Putrefaction arising from the Mixture of the Blood with the Excrements; for this fetid Vapour is highly unfriendly to Nature, since, by its Subtily, it penetrates to, contaminates, and totally destroys, that Fluid which animates the nervous and membranous Parts, and governs Sensation and Motion; because the Strength, the Origin of which is no other, than a pure and subtle State of the Humours, immediately begins to fail, and at last is totally destroyed, as we observe in a Sphacelus, and ulcerated Cancer of the external Parts, where the Putrefaction, penetrating into the internal Parts, proves the only Cause of Death, by destroying the Agility of the animal Spirits.

Among the putrid and malignant Disorders, the most terrible are the Plague, and petechial Fevers, which are sometimes more violent, though less contagious, than the Plague itself; for these Disorders are propagated, and conveyed to the Body, by a kind of Miasma, which is nothing but a putridinous Leaven; for as a small Quantity of any Mass already putrid, mixed with corruptible Substances, forthwith infects them, and surprisingly propagates itself, so highly subtle Vapours arising from Persons labouring under the Plague, or petechial Fevers, and received by the Air into other Bodies, partly by the Mouth and Nostrils, immediately reaches the Mass of Blood, and being partly swallowed with the Saliva, passes to the Primæ Viæ, quickly multiplies itself, and, at last, contaminates the whole Mass of Humours, producing the most terrible Symptoms. That the Nature and Essence of these Diseases consist in Putrefaction, is obvious from the uncommon Loss of Strength, the great Weakness and Inequality of the Pulse, the Conversion of the Carbuncles and Buboes into Abscesses, the highly fetid Exulcerations, the nauseous Scent of the Excrements, the black and livid Spots dispersed over the Body, which are only Species of Sphacelations, and the Smell of the Body after Death. And though these Miasmata infect sound and healthy Persons who contain a temperate Blood in their Veins, yet it is generally observed, that they exert a greater Force and Influence on Persons of cacochymic Habits, whose Primæ Viæ are full of peccant Juices, because they there meet with Humours already disposed to Putrefaction and Corruption; such as those of the salival Kind, which are easily thrown into a fermentative Motion: Hence the Reason is obvious, why the Plague rages most among poor People; and why those who are oppressed with Hunger, and live in an irregular manner, are most subject to those putrid Disorders. If a Dyentery, the Small-pox, the Measles, or a Purple Fever, are accompanied with Signs of a malignant Nature, and prove very mortal, they derive their malignant Nature from nothing but peccant Humours, and Juices dis-

posed to Putrefaction, and corrupted by a depraved Habit of Body.

Having thus investigated the Nature of the Plague, and of malignant Disorders and Fevers, which consist either in Putrefaction itself, or an easy Transition to it, it will be no hard Task for the skilful Physician to find out proper Remedies, and a due Method of using them, both for the Prevention and Cure of these Disorders; for nothing is more effectual for Prevention, than a good Diet, and a proper Regimen, taking care not to load the Stomach with too great a Quantity of Aliments, especially of a corruptible Kind. We must, also, take care, that the salutary Excretions, by which the Blood is excellently depurated, be duly and expeditiously carried on; for, by this means, the Miasma, not finding a Substance similar to itself, either does not operate at all, or renders the Progress and Termination of the Disease far more happy than they would have otherwise been. Under the Cure, those things are carefully to be avoided, which increase the intestine Motion of the Blood and Humours, such as all alexipharmic, hot, bezoardic, and spirituous Substances, which are so far from hindering the Putrefaction, that they rather accelerate and diffuse it: The Patient ought, also, to abstain from all alkaline, volatile, fetid, and oleous Substances, which are only the Produce of Putrefaction: On the contrary, Acids, which, by fixing the volatile and oleous Parts, strongly resist Putrefaction, are the best Medicines in the Plague. To this Class, also, belong earthy bezoardic Substances, and such as keep the Body in a gentle Diaphoresis; since there is not a more expeditious Method of removing a beginning Putrefaction, and evacuating the subtle fermentable Parts, than by the Emunctory of the Skin: And this Intention is best answered by such Analeptics as restore the Strength, and promote the Circulation of the Blood. Earthy and bezoardic Substances have this peculiar to themselves, that they, in some measure, preserve the Mixture of the Blood, and hinder its Dissolution.

To malignant Disorders, also, belong hectic Fevers, which arise not from so active, but a slow-proceeding Putrefaction, which preys upon the Strength: For, upon opening the Bodies of those who have died of hectic Fevers, they have been found to proceed from corrupt Abscesses, degenerating into a Sphacelus, in some of the Viscera, especially the Liver and Lungs. And this Corruption of the internal Parts is the Cause, why these Fevers are with Difficulty, if at all, susceptible of a Cure.

It is, also, to be observed, that most acute Fevers prove mortal by no other means than Putrefaction, as is obvious from dissecting those who die of them immediately after Death; on which Occasion an intolerable Stench, arising from nothing but the Putrefaction, is perceived; and, for the most part, the Stomach and Intestines, or some of the nobler Viscera, are found sphacelated: But as nothing more resists the Generation of Putrefaction, and the Sphacelation of the internal Parts, than hindering the Stagnation of the Blood, and preserving its equable Circulation, so the whole Business of the Physician is to prescribe such Medicines as preserve the Circulation of the Blood, restore Strength, and promote Perspiration; such as temperate bezoardic Mixtures, consisting of the Waters prepared from the Flowers of Egyptian Thorn, black Cherries, Cinnamon without Wine, Carduus Benedictus, and Roses, distilled Vinegar, Syrup of Citron-juice, the *Mixtura Simplex*, Crabs-eyes, diaphoretic Antimony, Hartshorn philosophically prepared, and native or common Cinnabar; the Use of which is to be long persisted in. Nor are we to suffer the Patient to be long costive, because the putrid Sordes, when translated from the whole Body to the Intestines, and there fermenting together, prove the Fomes of Putrefaction: For the Prevention of greater Mischief, the Primæ Viæ are to be carefully cleansed. But, for this Purpose, we are never to use drastic stimulating Medicines, since only gentle Laxatives, and mild Clysters, are to be prescribed, not in every Period of the Disease, but in its Remission.

We now come to consider, whether Camphire, which so powerfully resists Putrefaction, that nothing is found more effectual against an external Sphacelus and Gangrene, and, for this Reason, is called the best of Alexipharmics, may be safely used, to check a Putrefaction. Now, tho' Camphire is an highly subtle, though coagulated, and very evaporable Oil, yet it differs from other distilled Oils in this, that these induce a much greater Heat on the Blood, than Camphire, which soon transpires; whereas the others, in consequence of their viscid Nature, and tenacious Texture, continue longer in the Pores and Parts: This may be confirmed by an Experiment; for half a Dram of Camphire, dissolved in one Dram of Brandy, and taken internally, by a sound Man, produces rather a Sense of Cold, than of Heat, in the internal Parts; nor is the Pulse increased, or the Urine tinged of a red Colour: But if twenty Drops of the Oil of Cinnamon, or Cloves, are diluted in

P U T

Brandy, and taken, there is a remarkable Increase, not only of the Pulse, but, also, of the Heat. For this Reason, in malignant Disorders, I greatly recommend the internal Use of Preparations of Camphire, both for the Cure of Inflammations and malignant Fevers: And in this I do not rely upon Speculation only, but, also, upon Fact and Experience, by which we ought to conduct ourselves in the Use of all powerful and efficacious Medicines. In the Height and Exacerbation of the Disease, if the Skin, and all the Parts subservient to Excretion, are spasmodically constricted, and the internal Parts excessively hot, especially if the Patient is young, and accustomed to spirituous Liquors, it is expedient to abstain from Preparations of Camphire, which are most commodiously used in the Beginning, after cleansing the *Primæ Viæ* by a Vomit, if necessary, in Conjunction with cinnabarinæ bezoardic Powders, and a few Grains of purified Nitre, using at the same time a sudorific Regimen. I know some Persons, who, by certain Signs, appearing to be infected with a contagious malignant Fever, have, by the seasonable Use of Preparations of Camphire, once or twice exhibited, had a profuse Sweat excited, and been perfectly freed from their Disorder. In the time of the Remission, when the Skin is moist, the Pulse weak, and the Strength low; Camphire, with the Addition of bezoardic acidulated Substances, is an excellent Preservative against Malignity; and in violent Deliriums, no Medicine is more efficacious than Nitre, mixed with a small Quantity of Camphire. When the Strength is so far exhausted by the Violence of the Disease, that it begins to be insufficient, as it were, for promoting the Circulation of the Blood, it is excellently restored by a few Grains of Camphire, dissolved in Oil of sweet Almonds. And, lastly, in Fevers, arising from Inflammations of the internal Parts, half a Grain, or a Grain, of Camphire, mixed with Nitre, and frequently exhibited, is of singular Service: This Powder I have, also, used with Success, in violent Peripneumonies.

We now come to inquire, why scorbutic Patients, and those wasted with Age, are, generally, so subject to a fatal Sphacelus, from the slightest external Cause, or some Fault of the Blood: This, then, happens, in consequence of the Propensity of the Blood to a putridous Corruption; for a Scurvy is an excessive Impurity, or Cacochymy, of the Blood, arising from a Redundance of saline and sulphureous Particles, which, in consequence of the diminished Secretions, not only remain in the Habit, but, also, contaminate the benign and temperate Humours, whose due and natural Mixture they destroy. A Blood, therefore, impregnated with Impurities of this Kind, easily degenerates into a State of Putrefaction; for which Reason scorbutic Patients are often afflicted with ichorous fetid Exulcerations of the Mouth, Fauces, and other Parts, whilst the Gums become tumid and putrefied, with an intolerable Stench of the Mouth, and the inferior Parts of the Body are covered with Spots of a livid bluish Colour; which are the Signs of a slight Sphacelation. It is not, therefore, to be wondered at, that, from the slightest Cause, the Blood, becoming stagnant in the Parts, should degenerate into a sphacelous mortal Putrefaction; as, also, that a Sphacelus, arising from an internal Cause, is incapable of being cured; for the Blood, already greatly disposed to Corruption, is soon so infected by the Putrefaction already began in one Part, that the Danger cannot be averted by the most efficacious Medicines. Sphacelations, both of the internal and external Parts, are, also, very familiar to old Persons, because they have many Circumstances in common with scorbutic Patients; for, in consequence of the Thickness and Rigidity of the Fibres, contracted by Age, all the secretory and excretory Duets become narrower, and have their Diameters lessened: Hence the Secretions of the laudable Humours, the Application of the nutritive Juice to the minute Vessels of the Parts, and the Influx of the nervous Fluid into the Nerves, are diminished, the Strength of the whole Body, and all its Parts, impaired, and the Constitution rendered dry, parched, and wasted, by a slow Consumption: But as in this Decline of Age, in consequence of the contracted Emunctories, and diminished Excretions, saline and acid Sordes are accumulated in the *Primæ Viæ*, hence the Blood of old Persons is full of scorbutic Salts: Hence it is, that Itching, a dry Scab, red Urine, calculous Concretions in the Kidneys and Bladder, and tephaceous Concretions in the Gout, Catarrhs, Coughs, Rheumatisms, Stranguries, and Exulcerations of the Parts, are so frequent and familiar to old Persons: Hence appears the Reason why they have this in common with scorbutic Patients, that both their internal and external Parts are highly subject to a Sphacelation. I have seen the slightest Injury of the external Parts, the Sting, for Instance, of a Wasp, a gentle Contusion, or the unskilful Paring of a Corn in the Foot, produce a Sphacelus in old Persons. I have, also, seen very old Men die of a Cardialgia, or Colic, brought on by some slight Error in Regimen; for no other Reason, than that

P Y R

in those Parts, which were afflicted with Pain, a sphacelous Stagnation was brought on.

Since, therefore, cacochymic, scorbutic, and old Persons, are so subject to violent, putrid, and dangerous Diseases, those who intend to keep themselves free from those Disorders, ought carefully to abstain from every thing which can render the Blood impure. But, in particular, old Persons, who are already half scorbutic, ought carefully to abstain from all such Things as are fit for generating the Scurvy; such as all Sea Substances, which do not afford laudable Juices; Flesh, and other Aliments, indurated in the Smoke, salted Substances, all rancid, corrupted, and semiputrid Substances; Aliments of strong Juices, such as Pulses; a sedentary Life free from Exercise; a foggy, cold, moist, and heavy Atmosphere; heavy, sharp, or semiputrid Waters; living, and sleeping, in moist Places; long-protracted Care and Grief; a Neglect of usual Evacuations; the too great Use of acid and spirituous Substances; all which, as they are never beneficial, but highly injurious, to weak Habits, so they ought carefully to be avoided by old Persons. *Fræderic Hoffman.*

PYCNOCOMOS. A Name for the *Scabies*; *integri-folia*; *glabra*; *radice præmorsa*.

PYCNOSIS, πυκνωσις. Condensation.

PYCNOTICA. Incrassating Medicines.

PYCTE, πυκτός. A Mixture of Curds, and Honey.

PYE, πύς. The same as **PTHISIS.** *Arætus, de Caus. & Signis Diuturn. Lib. 1. Cap. 8.*

PYELOS. See **CHOANA.**

PYGÆ, πυγæ. The Buttocks. *Ruffus Ephesus, de Ap-
lat. Part. Corp. Human. Lib. 1. Cap. 15.*

PYGARGUS. A Name for a Sort of wild Goat; for the Heron; and for a Species of Eagle.

PYLORUS. The Right Orifice of the Stomach is thus called.

PYODES, πυώδες. Purulent.

PYON. Pus.

PYOPŒUS, πυοπύς. Suppurative.

PYOSIS, πυώσις. Suppuration: Of an *Hypopyon*; a Disorder of the Eye.

PYR, πῦρ. Fire.

PYRACANTHA. A Name for the *Mespilus*; *spinosa*; *Pyri Folia.*

PYRACEUM. Perry. See **POMACEUM.**

PYRAMIDALES MUSCULI. The Pyramidal Muscles of the Abdomen. See **ABDOMEN.**

PYRAMIDALIA CORPORA. Two Protuberances of the Medulla Oblongata, are thus called. See **CEREBRUM.** By some Authors the Spermatie Vessels are thus named.

PYRAMIS. A Cone. In Chymistry, used for making Regulus of Antimony.

PYRAMISTA. An Insect, very subject to fly into the Fire, or a Candle. The Poets make frequent Allusions to this in their Love Songs; but it is of no other Use, that I know of.

PYRENOIDES, πυρηνόειδης, from πυρην, a Nucleus, or Kernel. A Name for the Tooth-like Process of the second Vertebra of the Neck.

PYRETERION. The Part of a chymical Furnace, which contains the Fire.

PYRETHRUM. Offic. *Pyrethrum Officinatum.* Ger. 618. Emac. 758. *Pyrethrum vulgare Officinatum.* Park. Theat. 858. *Pyrethrum fiere Bellidis.* C. B. P. 148. *Bellis montana frutescens acris.* H. Monsp. 31. *An Bupthalamum Canariense Leucanthemum.* Pluk. Almag. 73. Phytog. 272. 6? **PELLITORY OF SPAIN.**

The Roots of the common Pellitory are about a Finger thick, hard, and of a yellowish-brown Colour on the Outside, and whiter within; of a very hot burning Taste; from which arise Stalks about a Foot high, much branched, and clothed with large winged Leaves, in Shape like those of Chamomile, but larger, and thicker: Among these grow several Flowers, much like the Flowers of Chamomile, but larger, set upon long Foot-stalks. It grows in Spain, and other warmer Countries, flowering in June and July. The Root is used.

The Root of Pellitory of Spain, held between the Teeth, helps the Tooth-ach, by drawing forth the cold watry Rheum: It, also, helps the Palsy of the Tongue, and the Loss of the Voice consequent therefrom: It is put into Matricatories for that Purpose; as, also, into drawing Cataplasms and Plaisters, particularly the *Emplastrum Cephalicum.* *Ateller's Bot. Off.*

Pyrethrum has its Name from πῦρ (*Pyr*), Fire, because of the igneous Heat of its Root: It differs from the *anthemum*, or *Chamæmelum*, by the Largeness of its Flower, and the acid and servid Taste of its Root.

It is imported from the Eastern Parts. *Matthioli* says, that it grows on some Mountains of Italy; but is there less acrimonious.

It stimulates to Venery, cures a Quartan, and gives Relief under an Hemicrania. *Schroder.*

Morison, or *Bobart*, affirm this Plant to be the genuine *Pyrethrum*; for what is esteemed by some the *Pyrethrum verum*, is an umbelliferous Plant. Authors were imposed upon by a corrupt Reading of *Dioscorides*, where, in the Description of the Flower, some Copies, for ἀνθός, erroneously substitute ἀνθός. *Hist. Oxon.* 3. 34.

PYRETHRUM VERUM. Offic. *Pyrethrum sylvestre*. Ger. 618. Emac. 758. *Pyrethrum umbelliferum*. C. B. P. 148. Raii Hist. 1. 462. *Pyrethrum umbelliferum primum*. Park. Theat. 891. *Pyrethrum umbelliferum Matthioli*. J. B. 3. 20. TRUE PELLITORY OF SPAIN.

The Roots and Leaves are like those of the *Cotula foetida*; the Umbella is supported by a Multitude of Pedicles, proceeding, as it were, from one common Centre, after the manner of the *Pecten Veneris*, or *Anethum*; the Flowers are white, and of a servid and bitterish Taste; to these succeed round blackish Seeds, larger than Aniseeds: The Roots are an Inch, and sometimes two Inches, thick, a Foot in Length, run deep under Ground, are of a brown Colour, inclining to yellow on the Outside, black within, and of an hot and acrimonious Taste.

Guilandinus cultivated this Plant in his Garden at *Padua*, and presented it to *Lobel*, by the Name of the *Pyrethrum verum*. The *Pyrethrum* of *Cesalpinus*, which bears a round compressed Seed, of the Figure of a Lentil, belongs to another Genus.

The Root of this *Pyrethrum* is often, and with good Success, held in the Mouth for the Tooth-ach, which it removes, by attracting a Multitude of Humours into the Mouth, together with the Spittle: It excites, therefore, a Salivation, which, perhaps, it would excite in a more plentiful manner, and of longer Duration, if it were taken inwardly, in small and repeated Doses. *D. Scame e Sylvii Lib.*

Besides this Species, *Ray* mentions the PYRETHRUM umbelliferum alterum. Park. Foliis Anethi. C. B. Gesneri. J. B.

It has a long simple Root, moderately fibrated, creeping, of the Thickness of a Finger, of an hot and burning Taste; the Leaves are like those of *Anethum*; and the Stalk like that of Fennel, and the Flowers grow in Umbellas exactly circular. *Raii Hist. Plant.*

This *Pyrethrum* is cultivated in the Gardens of the Botanists, and flowers in Summer.

It is used in lethargic Affections, the Palsy, and the like Disorders. The *Pyrethrum* sends forth a Stalk and Leaves like the *Daucus Sylvestris*, or Fennel, and has the circular Umbella of the *Anethum*. The Root is long, an Inch in Thickness, and of a very hot Taste. *Dale* from *Dioscorides*.

PYRETICA, according to *Blancard*, are Febrifuges.

PYRETOLOGIA, in Pathology, is the Doctrine relative to Fevers.

PYRETOS, πυρετός. A Fever.

A Fever is a very frequent Disorder, inseparably attended with an Inflammation, the Cause not only of many Diseases and Death, but, also, frequently of an happy and successful Cure.

As the Nature of this Disorder is of an highly latent and concealed Kind, so we ought the more carefully to guard against Mistakes and Errors in investigating it.

But, in a Research of this kind, Errors are easily fallen into, in consequence of the large Train of Symptoms, with which this Disorder is generally attended, and without which, however, there may still be a Fever.

That such Errors may be avoided, it is necessary, from among numberless Symptoms, to select those Phenomena alone, which always accompany every Fever; from the Presence of which Physicians know, that a Fever is present; and from the Absence of which they conclude, that a Person is free from a Fever.

Then, from these Symptoms and Phenomena, duly discovered, and maturely weighed, the particular Nature of the Fever is to be found out.

All Fevers, arising from an internal Cause, are accompanied with Horripilation, a quick Pulse, and Heat, at different Times, and in various Degrees of the Disorder.

The Fever in which the Horripilation, quick Pulse, and Heat, proceed with Velocity and Danger, is called an Acute Fever.

The Fever, on the contrary, in which these three Symptoms proceed slowly, either with or without Danger, is called a Slow Fever.

Both these Species of Fevers are either common and epidemical, or only affect particular Persons.

Those are called Acute Febrile Disorders, which are accompanied with an Acute Fever; whereas those are called Chronical Febrile Diseases, which are attended with a Slow Fever.

Hence it is, that all these febrile Disorders are not to be explained, without a previous Knowledge of the Nature of that Fever with which they are accompanied.

Now the Nature of the attendant Fever is to be estimated from the three common Symptoms before-specified; which are, Horripilation, a quick Pulse, and Heat.

Though these three Symptoms are present, at some time, in every Fever, yet the Velocity of the Pulse is the only Symptom which continues from the Beginning to the End of the Disorder, and by which the Physician judges, that a Fever is present.

In consequence of this, whatever Knowledge a Physician has of a Fever, depends entirely on the Velocity of the Pulse.

The proximate Cause, therefore, of this Velocity of the Pulse is, in like manner, the proximate Cause of the Fever, thus known from its Symptoms.

This Cause may, therefore, be a too quick Contraction of the Heart, or a too speedy reciprocal Influx of the nervous Fluid, conveyed from the Cerebellum into the Muscles and Cavities of the Heart.

Almost all Fevers hitherto observed, arising from an internal Cause, begin first with a Sense of Cold, Concussion, and Horripilation; and this Sense is greater or less, shorter or longer, internal or external, according to the Diversity of Patients, Causes, and Fevers.

In the Beginning, therefore, of every Fever arising from an internal Cause, the Pulse is quick, small, and frequently intermittent; whilst there is often a Paleness, Coldness, Rigor, Tremor, and Insensibility of the Extremities.

Hence it is obvious, that in this Period of the Disorder the sanguineous Humours become stagnant in the Extremities of the minute Vessels, whilst, at the same time, there is a Cause irritating the Heart to a stronger Contraction.

From these two Circumstances we discover the Cause of all the Symptoms which appear on such an Occasion, and are before enumerated.

In all Fevers where these Symptoms have preceded, there arises an Heat, which is greater or less, shorter or longer, internal or external, according to the Diversity of Fevers.

As this Heat succeeds the Fever already produced, it is obvious, the former must be rather the Effect, than the Cause and Essence, of the latter.

Hence, a quick Contraction of the Heart, and an increased Resistance of the Capillary Vessels, are Circumstances which account for all acute Fevers. Both of these Circumstances may, in a live Animal, be produced by numberless and infinitely various Causes; and as they may happen either jointly or separately, so when one is produced, the other easily follows.

For this Reason, the proximate Cause of a Fever, which consists in the quick Contraction of the Heart, and the increased Resistance of the Capillary Vessels, may itself have an almost infinite Number of proximate Causes, which are either singular, and peculiar to some Persons; or universal, and common to many: And these depend on the State of the Air, the Quality of the Aliments, and the Patient's Method of Life.

The Causes, therefore, of a Fever, are either particular, or epidemical.

The proximate particular Causes of a Fever may be reduced to five Classes; which are, first, Acrid Aliments, Drinks; Sauces, Medicines, or Poisons, when either possessed of such a Property as that they cannot be digested, moved, and evacuated; or when taken in such a Quantity as to irritate, suffocate, and obstruct the Vessels, by their Putrefaction. Secondly, The Retention of such Things in the Habit as ought to be evacuated, in consequence of Cold, Unctions, gloomy Dispositions of Mind, improper Aliments, Drinks, Medicines, Poisons, a cloudy and foggy Air, Ease, a Remission of usual Exercises, Obstructions of the Vessels by their Contents, or Compressions of them by surrounding Substances. Thirdly, Too much Exercise of the Mind, or Body; and acquir'd Heat. Fourthly, External Applications of an acrid, pungent, corroding, lacerating, caustic, and inflammatory Nature. And, fifthly, Such Substances as induce a great Change in the Humours and their Motion, such as many external and internal Things; Hunger; excessive Evacuations; the Pus, Water, and Ichor, in a Dropsy and Empyema; an acrid Serum collected in any Part; an hot State of the Bile; an Inflammation; a Suppuration; a Gangrene; a Cancer; long-protracted Watchings; intense Study, of any kind; and excessive Venery.

The Effects of a Fever are, a brisk Expulsion and Propulsion of the Fluids; an Agitation of their stagnant Parts; a Mixture of all their Particles; a Prevalence over the resisting Matter; a Concoction of the Humours; a Secretion of the concocted Parts; and a Crisis of that which, by its stimulating and coagulating Quality, produced the Fever; a Change of Health and Soundness into a morbid State; a Change of Health into a Disposition fit for bearing those Things to which the Patient was little accustomed before; an Expression of the most fluid

P Y R

fluid Parts of the Humours; and an Inspissation of the rest; Thirst, Heat, Pain, Anxiety, Weakness, Lassitude, a Sense of Weight, and Loathing of Food.

The sooner the Viscidity of the Juices is resolved, and the more expeditiously the Irritation is allayed, the slighter, shorter, and more salutary, the Fever is; and, on the contrary, it is the more violent, long, and injurious, the longer it is before the Viscidity of the Humours is resolv'd, and the Irritation allay'd. Fevers are, also, various, according to the several Degrees and Conjunctions of this Irritation and Viscidity.

Hence it is, that Fevers often exert the same Efficacy with Medicines, with respect to other Diseases.

Hence, also, the Beginning, Increase, Height, Decrease, Crisis, Change, and Cure of Fevers are various, in acute and particular Fevers.

A Fever terminates in Death, some other Disorder, or in Health.

It terminates in Death, when the Solids are destroyed by a Force acting too strongly on them; or when the Fluids are so depraved and peccant, as to obstruct the vital Vessels, or those through which new Fluids ought to be conveyed, in the room of those lost. Hence arise Inflammations, Suppurations, and febrile Gangrenes, in the vital Viscera, the Heart, Lungs, and Cerebellum; or aphthous Ulcers in the Primæ Viæ, the frequent Causes of Death in Fevers.

A Fever terminates in other Diseases, when either, by a too violent Agitation, it injures the Vessels, and, dissipating the more fluid Parts of the Humours, inspissates the rest; or when, by a too weak Action, it is unable, by its Force, to resolve the coagulated Parts of the Fluids; or when it deposite the critical Matter in some obstructed, dilated, or ruptured Vessels. Hence arise red Spots, Pustules, Erysipelas, Measles, Small Pox, Phlegmons, Bubos, Inflammations of the Parotid Glands, Abscesses, Gangrenes, Sphacelus, and Scirrhus.

A Fever terminates in Health, first, When by its Force it subdues, resolves, renders moveable, and carries off, by insensible Perspiration, the material Cause of the Fever; and, at the same time, checks its Impetus, by restoring an equable Circulation. This universal Resolution almost resembles the Resolution in the Inflammation of a particular Part. Secondly, A Fever terminates in Health, when the Matter of the Disease, being, by the Force of the Fever, subdued, resolved, and rendered moveable, yet retains a certain Quality, by which it resists the equable Circulation of the Blood, stimulates the Vessels, and, by exciting some sensible Evacuation, is expelled. Hence Sweat, a Discharge of the Saliva, Vomiting, a Diarrhoea, and copious Discharge of Urine, happen critically, after the Concoction of the Matter, and the State of the Disease, generally within fourteen Days.

A Fever, also, terminates in Health, when the Matter of the Disease being, by the Force of the Fever, subdued, resolved, rendered moveable, and again assimilated with the sound Humours, circulates without any Crisis, or the Induction of any other Disease.

The Genius, Difference, and Duration, of Acute Fevers, when observed from the Beginning, through the Increase to the Height of the Disease, enable us to prognosticate its Event, several Changes, and final Termination.

From all the Circumstances, therefore, already enumerated, the general Diagnostics and Prognostics of Fevers may be easily deduced.

The general Cure of Fevers is most effectually obtained, first, By preserving and supporting that Strength on which Life depends. Secondly, By correcting and expelling the acrid irritating Matter. Thirdly, By dissolving and expelling the viscid Juices. And, fourthly, by mitigating the Symptoms.

The Strength on which Life depends, is supported by Aliments and Drinks of easy Digestion, opposite to Putrefaction, allaying Thirst, fit for increasing the Appetite, and contrary to the known Cause of the Disorder.

The Aliments are to be exhibited at the time the Fever is absent, or, at least, when its Force is least.

The Aliments are to be exhibited in a small Quantity, tho' at frequently repeated Intervals, lest the Viscera should be oppressed, or a Change induced on them.

The Quantity and Quality of the Aliments are to be estimated and determined, first, From the Probability of the Duration of the Fever, whether for one, four, seven, nine, eleven, fourteen, twenty-one, thirty, forty, or sixty Days; for as much Aliments ought to be exhibited as are sufficient for supporting the Strength, and rendering it fit for the Purposes of Concoction, and a Crisis: The shorter the Disease, the less and the weaker the Aliments ought to be; whereas the longer the Fever, the more and the stronger they ought to be. Secondly, From the Age of the Patient; for the younger and the older Persons are, with the greater Difficulty they bear Hunger. Thirdly, The Height and Vehemence of the Disorder, when

P Y R

known, require Aliments of various Virtues, and exhibited in different Quantities. In the Height, a small Quantity of light Aliments are to be used; but, in the Increase and Decline, the more and the stronger the Aliments ought to be, the more the Disease is distant from its Height. Fourthly, From the Place in which the Patient lives: For those who live near the Equator, commodiously bear light Food, which does not so well agree with those who live near the Poles. Fifthly, From the Season of the Year; because the Summer requires light, and the Winter stronger Aliments. Sixthly, From the Custom and natural Constitution of the Patient: For the Person who, when in a State of Health, using delicate Aliments, has them easily dissipated, requires a pretty large Quantity of Aliments, because the Vessels and Viscera were accustomed to them before. And, seventhly, From the Sense of Lightness or Weight succeeding the Use of the Aliments.

Any external irritating Substance, such as the acute Fragments of Glass, Metal, Wood, Stone, and Bones, stimulating, corroding, vesicating, caustic, septic, and poisonous Substances, or such as produce a Redness of the Parts, are, with all Expedition, to be removed; and the Parts in which such Substances were lodged, and are injured by them, are to be fomented with viscid, mucous, mild, oleous, anodyne, and gently aperient Fomentations. Thus,

Take six Quince-seeds; and of the distilled Waters of Rose and Elder-flowers, each three Ounces: Make into an Emulsion, to which, when pure, add half an Ounce of rectified Spirit of Wine, and one Dram of the Tincture of Opium.

This Intention is, also, answered, by the Unguentum Aureum, Basilicon, Diapompholygos, the Unguentum Nutritum, Ointment of Poplar, and Ointment of Roses.

The acrid irritating Substance lodged internally, such as the Acrimony of an Inflammation, Suppuration, Gangrene, Sphacelus, Cancer, carious Bone, Ichor, Pus, and acrid or stagnant Lymph, is to be removed, or corrected, by the Methods prescribed under their respective Articles.

An acrid irritating Quality, induced on the Fluids, may and ought to be corrected by the Use of the six Nonnaturals, and various Remedies adapted to the known State and Nature of the Disorder. This Intention is excellently answer'd,

First, By Rest, both of the Body and Mind; Abstinence from too much Exercise; by moistening, diluting, mild, and lenient Substances, such as Ptisans, and laxative Decoctions.

Secondly, By temperating the excessive Heat of the Air, by cooling Exhalations, especially those of Plants proper for this Purpose; by drinking subacid, gently-nitrated Water, with a small Quantity of subacid Wine; by subacid, gently demulcent, and a little salted, Aliments; and by Medicines of a similar Nature. Thus,

Take of the Decoction of Barley, twenty-five Ounces; of pure Nitre, one Dram; of Rhenish-wine, six Ounces; of the Robs of Currans, and Elder, each two Ounces: Mix all together, and let the Patient take an Ounce or two every Quarter of an Hour.

Take of the distilled Waters of Succory, Fumitory, and Baum, each three Ounces; of the Spirit of common Salt, one Dram; of the Syrup of Mulberries, two Ounces; and of pure Nitre, half a Dram: Mix all together, and let the Patient take a Spoonful every Half-hour.

Take of the Crystals of Tartar, two Drams; and of pure Nitre, half a Dram: Reduce to a Powder, of which let the Patient take half a Scruple every three Hours, in some proper Ptisan.

Thirdly, By correcting the excessive Moisture of the Air, by large Fires of aromatic and resinous Woods, and by the Exhalations of aromatic Substances. Thus,

Take of the recent Herbs of Majoram, curled Mint, Origanum, and Rosemary, each two Handfuls; of the Flowers of Roman Chamomile, red Roses, Tansey, and Lavender, each one Handful; of Syrian Marum, half an Handful; of the Roots of Florentine Orris, Garden Angelica, and Masterwort, each three Ounces; of the Shavings of Sassafras, two Ounces; and of bruised Celery-seeds, three Ounces: Cut all down, and reduce to a Powder, to be sprinkled in the Room where the Patient is.

Fourthly, By correcting the putrid State of the Air, by throwing Nitre, Gunpowder, Vinegar, and Salt, upon live Coals.

Fifthly,

Fifthly, If a Fever is excited by Affections of the Mind, the Passions of the Mind are to be regulated by Reason, and contrary Affections; by Variety of Objects, Anodynes, and Opiates.

Sixthly, When a Fever proceeds from acrid acid Aliments; this Acrimony is to be diluted, check'd, absorb'd, and changed into a compound Salt; and this Effect is produced by the aqueous and gelatinous Parts of Animals, by oleous and cretaceous Substances, Shells of Fishes, Crabs-eyes, pinguious Earths, alkaline, fixed, volatile, simple, and compound Salts.

Seventhly, When the Fever arises from acrid saline Aliments, this Acrimony is to be diluted by aqueous Medicines, and evacuated at the same time; tempered by mild oleous Medicines, and corrected by lixivious Preparations of Quick-lime.

Eighthly, When the Fever proceeds from acrid, aromatic, and heating Aliments, the Acrimony is to be diluted by aqueous Fluids, corrected by Acids, resolved and deterged by saponaceous Acids, and tempered by mild glutinous Substances. As alkaline acrid Substances belong to this Class, so we hence learn the Method of treating Fevers produced by them.

Ninthly, When a Fever is produced by the alkaline Parts of Animals, it is to be cured by the Measures directed under the Article ALKALI.

Tenthly, When a Fever proceeds from too large a Quantity of Aliments, or the use of such as constrict the Stomach, it is to be cured by Dilution, Fasting, Vomiting, and rendering the Body soluble. Gentle Vomits may be prepared, in the following manners:

Take of light Barley-water, thirty-six Ounces; of Oxymel of Squills, three Ounces; and of vitriolated Tartar which is not acid, two Drams: Mix, and let the Patient take two Ounces every Half-hour. Or,

Take of the Rob of Elder, three Ounces; Vinegar of Squills, one Ounce; and distil'd Baum-water, six Ounces: Mix all together, and let the Patient take half an Ounce every Half-hour. Or,

Take five Grains of Emetic Tartar, for one Dose. Or,

Take one Ounce and an half of Emetic Wine for a Dose. Or,

Take of white Ipecacuana-root, one Scruple: Reduce to a Powder, to be taken for one Dose. Or,

Take of the Powder of Ipecacuana-root, four Scruples; and of White-wine, three Ounces: Boil in a long Phial, for four Hours; and exhibit the Liquor, when strain'd, for one Dose. Or,

Take five recent Leaves of Asarabacca, cut down; pour upon them boiling Water; let them infuse for half an Hour; and exhibit the express'd Juice for one Dose.

Eleventhly, A Fever brought on by acrid, fermented, or fermenting Liquors, acid, oleous, aromatic, or distil'd Fluids, or a simple Acrimony, is to be removed by the same Remedies with those mentioned above in N^o 5. 6. and 8.

Twelfthly, A Fever arising from excessive Watching is cured by the same Methods with those recommended above in N^o 1, 2, and 5.

Thirteenthly, If a Fever arises from an alkaline, acid, oleous, or saponaceous putrid Acrimony, contracted by a Retention of the excrementitious Humours, these must be rendered moveable, their Passages must be lubricated, and their proper Emisseries opened; mean time, the vital Powers, which expel them, must be stimulated, and augmented: And this is to be done both by internal and external Remedies.

The principal excrementitious Humours, which, if retained, are capable of exciting a Fever, are the Fæces of the Belly, the Urine, the Lochia, the hæmorrhoidal Blood, and the perspirable Matter.

The Emisseries are opened by resolving the Matter fixed therein, and by relaxing the obstructed Emisseries: This is done by Baths, Clysters, Frictions, Abrasions of the Hair, and cleansing of the Skin.

What stagnates at the Extremities of the conical Vessels, on account of too great a Quantity of Blood, by which the Vessels are compressed, is reduced to a State of Fluidity, by diminishing the Quantity of Blood by Venesection; and we learn, that this is the Case, by the Signs of a PLETHORA, specified under that Article.

What adheres to the Extremities of the Capillary Vessels, on account of spasmodic Contractions of their Fibres, by which their Capacities are diminished, is resolved by relaxing the

Fibres, and removing the Acrimony which causes their Contraction; for the Methods of doing which, see the Articles FIBRA, and OBSTRUCTION.

What adheres on account of its own Viscidity and Lensor, is resolved by various Remedies, the principal of which consists in a due Moderation of the Fever itself, in such a manner, that by means thereof the Coagulation may be resolved. It is, therefore, necessary to regulate the Fever in such a manner, first, that no Inflammations, Suppurations, Gangrenes, or Sphacelations, may be produced; the Danger of which is evinced, by the Violence of the Symptoms, particularly Heat, compared with the Strength of the vascular System.

Secondly, That the most fluid Parts of the Blood may not be dissipated by too violent a Motion thereof; the Signs of which Dissipation are, a Dryness of the Nostrils, Eyes, Throat, and Tongue; an Hoarseness, a Dryness of the Skin, a diminished Excretion of Urine, and a small, quick, and unequal Pulse.

Thirdly, That, before the Concoction of the febrile Matter, the Fever may not languish too much, so as to be incapable of subduing, moving, secreting, and excreting the Cause of the Disease. This State is distinguished by an universal Languor of all the vital Actions, before the Signs of Concoction appear.

In case the febrile Motion is exorbitant, (See the Dissertation on Disorders arising from an Excess of the Circulation, under the Article SANGUIS), it must be moderated by Abstinence, or an extremely thin Diet, by aqueous Drinks, by a somewhat cool Air, by calming the Passions of the Mind, by Venesection, refrigerating Clysters, and by mild, aqueous, glutinous, refrigerating, anodyne, and opiate Medicines.

Refrigerating Clysters may be prepared in the following manner:

Take of pure Nitre, two Drams; of Honey of Roses, one Ounce; and of recent Whey, twelve Ounces: Mix for a Clyster. Or,

Take of common Vinegar, one Ounce; of Native Nitre, three Drams; of solutive Syrup of Roses, with Sena, two Ounces; and of a Decoction of Barley, twelve Ounces: Mix for a Clyster. Or,

Take of Butter-milk, ten Ounces; and Syrup of pale Roses, two Ounces: Mix up, for a Clyster. Or,

Take of the common emollient Decoction, eleven Ounces; of pure Nitre, three Drams; and of Honey of Mercury, one Ounce and an half: Mix for a Clyster.

If the Fever is too languid, it must be raised by a cardiac Regimen, consisting of the more generous Sorts of Food and Drink; by respiring a somewhat warm Air; by exciting the Passions of the Mind; by acrid, volatile, aromatic, fermented Medicines; by Frictions, Heat, muscular Motion, Baths, and Fomentations.

FORMS OF MEDICINES IN A FEBRILE LANGUOR.

Take of Oxymel of Squills, three Ounces; of *Matthioli's* Spiritus Vitæ, three Drams; of distilled Mint-water, four Ounces; and of distilled Cinnamon-water, one Ounce: Mix all together, and let the Patient drink an Ounce every Hour.

Take of the Diascordium of *Sylvius*, one Scruple and an half; of the Theriaca Andromachi, one Dram and an half; of the Syrup of the Five aperient Roots, two Ounces; and of the distilled Water of Carduus Benedictus, six Ounces: Mix all together, for the same Use.

Take of the Confection of Alkermes, one Dram; of candied Ginger, six Drams; of the Roots of Contrayerva, and *Virginian* Snake-root, each one Dram; and of the Syrup of the Five aperient Roots, a sufficient Quantity for making a Conserve: Of which let the Patient take half a Dram every four Hours.

Take of the Countess of *Kent's* Powder, one Scruple and an half: And exhibit it for a Dose every four Hours.

Take of White Ginger, *Winter's* Bark, of the Roots of Zedoary, Contrayerva, and *Virginian* Snake-root, each one Dram; and of the Troches of Vipers, two Drams: Reduce to a fine Powder, to be divided into Doses of one Scruple and an half; one of which is to be taken every four Hours.

Take of the Salt of Carduus Benedictus, half a Dram; of burnt Hartshorn, one Dram; of red Coral, two Scruples;

P Y R

ples; and of the distilled Oils of Cinnamon, and Citron-peel, each three Drops: Reduce to a Powder, to be divided into ten Doses, for the same Use.

Next to the due Regulation of the febrile Motion, the most important Remedy against the Viscidity of the Juices is, the Restitution of the elastic Force of the Vessels, by diminishing the Quantity of Fluids, by copious Venesection, performed with Expedition, and from a large Wound; and immediately after, or at the same time, increasing their Motion by stimulating Remedies.

Lastly, The viscid Juices are render'd fluid, by diluting with aqueous Drinks, Baths, Fomentations, and Clysters; using, at the same time, Frictions. And these have a much better Effect, if taken warm; if resolvent Salts, as Nitre, are mix'd in a due Proportion with the aqueous Fluids; and if gently aromatic, bitter, and lactescent cooling Vegetables are boiled in them.

The bitter lactescent cooling Vegetables hinted at by the Author, are the

Chondrilla. Gum Succory.

Cichorea. Succory.

Hieracia. Several Species of Hawkweed.

Intubus. Endive.

Lactuca. Lettuce.

Scorzonera. Vipers-grass.

Sonchus. Sow-thistle.

Taraxaca. Several Species of Dandelion.

Tragopogon. Goats-beard.

But, that these may operate well, expeditiously, safely, and with Efficacy, Venesection is to precede their Use; for this facilitates their Ingress, their Mixture with, and Action upon, the Blood.

So soon as, by these Remedies, the morbid Viscidity is dissolved, by a Continuation of the same, and sometimes augmenting their Actions, it is forced through the Vessels, and expelled: Sometimes, however, it may be so far subdued and amended, as to be rendered similar to the healthy Juices, and require no Expulsion.

The usual Symptoms, accompanying an acute Fever, are, Cold, Tremors, Anxiety, Thirst, Nausea, Eructations, Vomiting, Weakness, Heat, Exertuation, Dryness, Delirium, Coma, Watchings, Convulsions, Sweats, Diarrhoeas, and inflammatory Pustules.

All these Symptoms arising from, and caused by the Fever, cease spontaneously, when that is removed: For this Reason, they require no particular Method of Cure, provided they can be supported without endangering Life, till the Termination of the Fever.

But it must be remarked, that these Symptoms frequently arise from an Attempt of the vital Powers to form a Crisis, and expel the critical Matter; and then they precede, accompany, and follow the Crisis; in which Cases, nothing must be done to moderate them, which can in any Degree interfere with the salutary Work carrying on.

But if any of these Symptoms are unseasonable, or too severe to be supported without the Hazard of Life; if so troublesome, as to render the Patient insupportably uneasy; or if there is Danger of their producing some more formidable Disorder; in such Cases they must be mitigated by Remedies adapted to them; always having due Regard to the Cause and State of the original Distemper.

FEBRILE SYMPTOMS; and first of

FEBRILE COLD.

Cold, in the Beginning of Acute Fevers, arises from a decreased Attrition of the Liquids with each other, and with their respective Vessels; a Diminution of the circulatory Motion; a Stagnation of the Liquids at the Extremities of the Vessels; a diminished Contraction of the Heart, and only a partial Evacuation of its Ventricles; and a less copious Influx of the Spirits conveyed from the Cerebellum.

This Cold, if of long Duration, causes polypose Concretions in the larger Vessels near the Heart; and in the small Vessels an Evacuation of the Fluids they ought to contain, in consequence of their Contraction; and in both these Cases many and severe Disorders are excited.

Hence the Reasons are evident, why intense Coldness, in the Beginning of Acute Fevers, is of very bad Prefage; why the Fever is dangerous, in Proportion to the Cold perceived upon its first Attack; and why, in the Beginning of the Plague, an excessive Sensation of Cold is succeeded by as excessive a Degree of Heat.

If any Attempts are made to remove the Coldness in the Beginning of Acute Fevers, by any Remedies which stimulate briskly, under whatever Denomination, a Foundation is frequently laid for an incurable Inflammation in the Sequel. For

P Y R

this Reason, all kinds of acrid saline Medicines, aromatic and oleous Substances, and Vescatories, are to be condemned, in these Cases, as highly pernicious.

But a much more safe, and effectual Method of Cure, may be pursued, by exhibiting warm aqueous Drinks impregnated with Nitre, a little Honey, and Wine; by Baths, Vapours, Fomentations, and Lotions, made of the same Sorts of Liquors; and by moderate Frictions: For these, applied at first, are capable of curing and preventing very great Disorders.

Take of Barley-water, thirty Ounces; of pure Nitre, two Drams; of simple Oxymel, three Ounces; and of distilled aromatic Clove-water, two Ounces: Mix all together, and let the Patient, every Quarter of an Hour, drink two Ounces, pretty warm.

Take of the Four greater and lesser cold Seeds, each two Drams: Make into an Emulsion with Water, with three Pints of which mix, of distilled Fennel-water, four Ounces; of Sal Prunellæ, two Scruples; of the Syrup of the Five aperient Roots, two Ounces; and of the Syrup of Violets, half an Ounce: To be exhibited for the same Purposes with the other.

Take of distilled Borago-water, one Pint; of the distilled Water of Rose-flowers, one Ounce; of distilled Elder-flower-water, eight Ounces; of Distilled Cinnamon-water, one Ounce and an half; of *Matthioli*'s Spiritus Vitæ, half an Ounce; and of *Fernelius*'s Syrup of Mugwort, two Ounces: Mix all together, and exhibit for the same Use.

Coffee, Decoctions of Sassafras and Sanders, together with others of a like Nature, are of singular Service in the cold Fit, especially if towards the End of their Preparation a small Quantity of some aromatic Substance is added. Thus,

Take of the White, Yellow, and Red Sanders, each one Ounce: Boil in Water for a Quarter of an Hour: Then add, of the Roots of Fennel, four Ounces; of the Shavings of Sassafras, two Ounces; and of Liquorice, half an Ounce: Let them boil for a Moment, and strain off four Pints; for the same Use with the others. *Boerhaave*.

PROGNOSTICS FROM COLDNESS IN ACUTE DISEASES.

A Coldness of the Body, which may rather be called a *Coldness*, or moderate *Heat*, after some good Evacuation, by which the Pulse is rendered better, and stronger, is a very good Sign, as it indicates a critical Solution of the Fever: That *Coldness*, also, which is the Consequence of refrigerating or allaying the Heat of a Fever, and is attended with Signs of Concoction in the Urine, Spit, or Stools, (where the Disease has affected the Nervous System, spirituous Parts, or Belly) and an Alteration of the Pulse for the better, is a very good Symptom, and signifies a safe and speedy Return of Health. A *Coldness*, also, is sometimes observed to be critical, or preceding a very good Crisis.

Though a *Coldness* thus qualified, as before described, is to be esteemed salutary; yet it rarely happens that we can draw any good Prognostic from a *Coldness* of the Body. This *Coldness*, to proceed, is observed either in the whole Body, or in the external Parts; in continual Fevers it is generally mortal, but in very robust Constitutions it portends not Death, but the long Continuance of the Disease. Under great Weakness it is always mortal, that is, where the Disease has been great and violent; when it is the Consequence of an Extinction of the Faculty, it shews Death to be very near: But that it proceeds from such a Cause, will be indicated by other preceding destructive Signs.

Some who labour under an Anasarca, but especially under an Ascites and Leucophlegmatia, have a *Coldness* almost of the whole Body; and the same is observed in Persons affected with inward Suppurations when dying; such have a *Coldness* or Chilness in almost every Part, either from an extraordinary Resolution of the natural Heat, or a Redundance of cold Humours.

A *Coldness*, however, of this Nature, in the extreme Parts, affords not always sure Grounds for Prognostication; for in some Patients, not under any acute Distemper, such a *Coldness* is not much to be feared. In Diseases, says *Galen*, not attended with a Fever, which happen in Winter, and to old Persons, for the extreme Parts of the Body, as the Ears, Nose, Feet, and Hands, to be cold, is not at all surprising; since, as he attests, in his second Comment on the *Prognostics*, those Parts are naturally bare of Flesh, and, also, at a great Distance from the Viscera.

But a *Coldness* of this Sort, in Acute Diseases, is no small Evil; for, by means hereof, through Weakness, the natural Heat is prevented from penetrating to the extreme Parts of

the Body; besides, under acute Disorders, through the Violence of the Inflammation infesting the Viscera, the Blood is distributed but in small Quantities over the Body. In these Kinds of Disorders; therefore; for the Body to be cold, and chilled, and not only in the Extremities; but in every Part together, is very pernicious; unless occasioned by the Approach of a Fit; for it indicates the natural Heat to be either extinguished, or to labour under a Suffocation from the Multitude of Humours; but such a *Coldness* is attended with many other mortal Signs: Many dying Persons appear cold, with Desudations, or cold Sweats, and an extreme Languor; and they appear not only to be excessively cold, but, also, hard; whence we read, 1 *Prorrh.* 77: "That a Refrigeration with an Hardness, is a destructive Sign." But we shall proceed to examine more accurately into the Prognostics, which may be drawn particularly from a *Coldness* of the extreme Parts:

OF PROGNOSTICS FROM A COLDNESS OF THE EXTREME PARTS OF THE BODY.

The extreme Parts of the Body; which *Hippocrates* in his *Prognostics* calls the *Head, Hands, and Feet*; *Galen* on 7. *Aph.* 1. more distinctly; the *Nose, Ears, Hands, and Feet*, are affected with a *Coldness* in acute Diseases, when the natural Heat is either contracted, resolved, oppressed; or suffocated, or, in the last place, extinguished. The natural Heat is contracted inwardly to the Viscera, relinquishing the extreme Parts of the Body, and possessing the middle Parts, the Thorax, and the Belly, either on account of a violent Inflammation, or Erysipelas, affecting the Viscera, and, as *Galen* says, by its Heat attracting the Blood, in manner of a Cupping-glass, to the affected Part, or from a severe Pain in the Stomach, or its Mouth, or in the Colon, small Intestines, Uterus, or Kidneys; or, lastly, on occasion of the Fit, when Nature is at Work in the internal Parts, and makes its utmost Efforts to expel the redundant Humours with which it is oppressed; from which we prognosticate sometimes Death, sometimes Recovery, according to the present extraordinary Degree of Strength or Weakness of the Patient.

The natural Heat is resolved, either by the Violence of the febrile Estuation, or some vehement Pain, or immoderate Evacuation, or some poisonous Juice offending the Heart, and the Mouth of the Stomach, or by a sudden and immoderate Fit of Mirth.

The natural Heat is oppressed or suffocated in the Viscera, whence the remote Parts, being left destitute of their wonted Supplies of Heat, are refrigerated; when the Mouth of the Stomach is either overloaded with an immoderate Quantity of Food, or strongly vellicated by mordacious Humours, as *Galen* expresses it, *Com. in Lib. de R. V. I. A.* or when, the Viscera are infested with a Multitude of corrupt or crude Humours, by which the natural Heat is either suffocated, or remarkably oppressed, in the same manner as when by heaping great Quantities of green Wood upon a Fire, the same is so far from being increased, that it is quite suffocated, or, at least, much diminished, by so doing. Thus is the Heat shut up, and confined, within the Viscera by the Redundance and Coacervation of the Humours, so that it cannot penetrate or expand itself to the exterior Parts; the Veins and Arteries, by which it was diffused from the Viscera, being obstructed by those crude or corrupt Humours. A Fever proceeding from such a Cause is, by some, called *Lipyrria*, [λεπυρία, λιπύριον, λιπυρία] by others, *Asaphodes*, that is, obscure and latent [see *ASAPHIDES*]; by others is described as mild and gentle externally, but violent and tumultuous within: The Reason is, because the Fever owes its Original to a Multitude of putrid Humours, or a Redundance of cold, crude, and gross Humours, by which the Heat is suffocated; or to a Phlegmon affecting the Viscera, or to a malignant and poisonous Putrefaction; in all which Cases there is a *Coldness*, or, at least, a Coolness, and Absence of Heat, in the extreme Parts.

The natural Heat is not only destroyed or diminished by Strangulation or Suffocation, but is even extinguished by an intense *Coldness*, or an occult poisonous Quality, by which the vital Parts are corrupted; as may be observed in the Effects of cold Poisons, and such things as are mortal from a Property inherent in their whole Substances, as *Galen* expresses it.

Again, the natural Heat, which has its Seat in the solid Parts, according to *Galen*, may be wasted, resolved and dissipated, by a greater or flaming Heat consuming the humid Parts, by which the natural Heat itself is preserved, and lives. Thus it happens in hectic Disorders, and under violent Pains of the Viscera, by which the natural Heat of those Parts is corrupted and resolved; on which account, *Hippocrates* had Reason to pronounce, 7 *Aph.* 26. a *Coldness* of the extreme Parts, under a violent Pain in the Parts of the Region about the Belly, a bad Sign.

In the last place, a *Coldness* may be generated, or Heat be destroyed, by an immoderate Evacuation, either spontaneous, or procured by Art; the Consequence of which; when extreme, is a mortal Syncope; in which the Patient dies under a *Coldness* of the extreme Parts: And the Symptom is occasioned by a Resolution of the Heat from opening an Artery.

We have hitherto been employ'd in examining into the Causes of this *Coldness*, or Extinction or Diminution of Heat; in the extreme Parts, and proceed now to the Prognosis, or Signs, afforded by it for our Observation; from whence we may predict a good or bad Event in an acute Disease.

In the first place, then, a *Coldness* of the extreme Parts, when Nature makes Attempts towards a Crisis, with other good Signs, must be esteemed salutary. But at the periodical Return of a Fit, or under a long Disease, such a *Coldness* affords no certain Prognostic; neither is it to be accounted a mortal Sign in old Persons, and in the Winter-season.

A *Coldness* of the extreme Parts (with the before-mentioned Exceptions) in acute Diseases is, as *Galen* says, *Com. in 7 Aph.* 1. no slight Disorder, but a very pernicious Symptom; as it is the Consequence of a violent Inflammation of the Viscera. But here we are to except, also, a *Coldness* of the Extremities from unseasonable Eating; and what is occasioned by a Paroxysm, in which, says *Galen* on the *Prognostics*, not only the extreme Parts, but the Skin about the Ribs and Belly, are rendered cold.

A *Coldness* of the extreme Parts sometimes begins at the same time with the Disease; and this Symptom was observed by us one Year in many wandering malignant Fevers, which derived their Original either from a most intense Degree of Putrefaction, by which the Viscera are affected, as it were, with Poison, and the natural Heat on that Account very much resolved, or else retracted inwards, or almost suffocated by the Redundance of the highly putrid Humours; or, which is the last Account to be given for it, the Fever was kindled up, and took its Rise; from crude and pituitous Humours, as we observe in a *Febris Amphemerina*, or Quotidian.

A *Coldness* of the Extremities, in continual Fevers, is always bad, and imports Death, or Malignity, but most commonly Death. When this Symptom appears in the Beginning, together with the Fever, and not in an extraordinary Degree, it foreshews only a Malignity, and is accounted by Physicians a pathognomic Symptom of malignant Fevers, in which the Patient is often not very thirsty, nor has his Tongue very much dried; and this *Coldness* is sometimes equal, or of one Temperature, during the whole Course of the Disease, and sometimes unequal, or more or less increased and diminished.

A *Coldness* of the extreme Parts, not in the Beginning of the Disease, but on a critical Day, with critical Signs, indicates a Crisis, or a Change of a continual Fever into an Intermittent. But an intense *Coldness* of the Extremities, and of long Duration, with bad Signs, is always bad, and worst of all on a critical Day.

An almost invincible *Coldness* of the extreme Parts is a mortal Symptom: And this is confirmed by *Hippocrates* in his Observations, 1 *Epid. Sect.* 1. on a very mortal epidemic Fever, in which the Patients, he says, "were very subject to Refrigeration of the extreme Parts, into which it was very difficult to recal the Heat." And by what he tells us, 3 *Epid. Sect.* 3. in his Account of the Symptoms of an epidemic, and very malignant burning Fever, among which was "a remarkable *Coldness* of the Extremities of the Feet and Hands, and especially about the time of the Paroxysms, into which Parts the Heat returned but by slow Degrees, and not in a kindly manner." To the same Purpose he says, of some who died of a Tabes, that, towards their End, "they were much affected with *Coldness*, and were hardly capable of receiving Heat." In *Prorrh.* 65. we read, that "Refrigerations after a Rigor, which are not succeeded by a Return of Heat, are bad." Thus they proved, for Instance, in the Case of *Philiscus*, 1 *Epid. Sect.* 3. *Agr.* 1. "whose extreme Parts [the Day before he died] were cold on every Side, and never recovered any Heat afterwards." The same happened to *Silenus*, *ibid. Agr.* and others mentioned in the *Epidemics*, not long before their Death.

In Persons very near Death, there is observed a *Coldness* of the extreme Parts equal to that of a Marble-stone, and often attended with an Hardness and Lividness. Now an Hardness, with an intense Degree of *Coldness*, is accounted a mortal Sign, as we read 1 *Prorrh.* 77. on which *Galen* says, "If the *Coldness* be so intense as to cause a total and absolute Refrigeration, with an Hardness, it is a Sign of Extinction," or that the natural Heat is extinguished.

A *Coldness* of the extreme Parts, attended with a Lividness, is no less mortal; for this latter is of all Symptoms the most pernicious, and shews Death to be at the Door. For a livid Colour

Colour in those Parts indicates an Extinction of the natural Heat, as we are taught by *Galen*, who, in his Comment on the third Epidemic, tells us, that a Coldness of the extreme Parts, attended with a Lividness, is an evident Sign of Death. And this is confirmed by *Hippocrates*, *Lib. Prognost.* where it is said, that, "If, besides this dead Heaviness of the Body, [before mentioned] there be, also, a Lividness of the Nails and Fingers, nothing is to be expected but immediate Death." And, in what follows, we read, "That for the Fingers and Feet to be quite black, is less pernicious than for them to be livid;" and not without Reason, since a Lividness of these Parts always proceeds from an Extinction of the natural Heat, but a Blackness is not always from that Cause; for it may be owing to a black Humour settled in those Parts. We may conclude, therefore, that if to a Coldness of the extreme Parts there accedes a Lividness of the same, it is a most mortal Symptom, and shews Death to be near at hand. This we have abundantly confirmed by *Hippocrates* in his first and third Epidemics, by Instances in *Philiscus*, *Silenus*, the Woman who lay ill of a Quinsy at the House of *Aristion*, 3 *Epid. Sect. 1. Agr. 7.* the Daughter of *Euryanactes*, *ibid. Agr. 6.* *Erasmus*, and the young Man who lay ill in the *Forum Mendacium*, in all whom this Symptom was observed as they lay dying.

A great Coldness, or Chilness, of the extreme Parts, attendant on an intense Thirst, with a vehement Heat in the Thorax or Belly, is esteemed very pernicious, because it indicates a violent Inflammation of the Viscera, and is, as *Galen* says, *Com. in 7 Aph. 1.* an usual Symptom of the same. This is asserted, also, by *Hippocrates*, *Prognost.* where he says, that "For the Head, Feet, and Hands, to be cold, whilst the Belly and Sides are in an Heat, is bad;" and *Galen*, in his Comment, says, "it is not only bad, but mortal." The Sense of this Passage is very well and fully expressed by *Cornelius Celsus*, in the following Words: *Gai Febre æque non quiescente exterior Pars friget, interior sic calet, ut etiam sitim faciat, lethale:* "A Coldness of the exterior Parts, where the Fever ceases not in Proportion, and an Heat in the interior Parts so great as to cause a Thirst, is mortal."

A Coldness of the Extremities is accompanied with other pernicious Signs, besides those mentioned; such as a violent and continual Pain of the Head or Viscera, Want of Sleep, a Coma, a furious or gentle Delirium, Dotage, Loss of Memory, Deafness, Blindness, Convulsions, Tremor, Loss of Voice, Hiccup, Restlessness, Anxiety, difficult Respiration, and cold Expiration from the Mouth and Nostrils, turbid Urine, which will not become clear, black Urine, with a black ENMOREMA, [see that Word] white, aqueous, lucid Urine, and Suppression of Urine, Drops of Blood from the Nose, virulent Vomitings, bad and copious Stools, which give no Relief, and other Symptons of the like Kind. Any of those, appearing with a Coldness of the extreme Parts, portends Death; and the more there are of them, the more certain and speedy is the fatal Event. This is illustrated by *Hippocrates* in the Case of *Silenus*, so often quoted, of whom he observes, that "On the sixth Day he had a thin small Sweat about his Head, his extreme Parts were cold and livid, he was very restless, voided nothing by Stool nor Urine, and had an high Fever." And of *Pythion*, 3 *Epid. Sect. 3. Agr. 3.* who died in *Thafos* in ten Days, it is observed, that "On the second Day about Noon, his extreme Parts, and especially his Head and Hands, were affected with a Coldness; he was speechless, and lost his Voice, fetched his Breath short, and at long Intervals, [βραχυπνοὶ ἐν χρόνῳ πνέοντες. We have here, with *Galen*, and some few Copies, joined the three last Words with the first, and not with ἀνθερμαρδὸν which follows them. See BRACHYPNOEA]; his Heat returned with a Thirst, he had a quiet Night, and sweated a little about the Head." From these Instances, with what has been said, it appears, that a Coldness which is perpetual, or in a very high Degree, or attended with an Hardness, or Lividness, is a very pernicious Symptom, as indicating an Extinction of the natural Heat.

We may form Prognostics of a bad Event, also, from a Coldness, with respect to the preceding Symptoms, as, for Instance, when it succeeds a Rigor, and is not removed, according to 1 *Prorrh. 65.* where we read, that "Refrigerations succeeding a Rigor, and not followed by a Return of the Heat, are bad."

For the extreme Parts to be much chilled after bad Evacuations, is pernicious, and especially if these Evacuations themselves are of the Number of mortal Signs; such as Blood falling by Drops from the Nose, cold Sweats, Desudations in the Head, Urine aqueous, livid, isæric, turbid, depositing no Sediment, black, with a black Enmorema, a Suppression of Urine, Stools fat, liquid, very fetid, too frequent, or immoderate in Quantity, Spit black, livid, viscid, expectorated with much Difficulty, or quite intercepted. A Coldness, or Refrigeration

of the extreme Parts, succeeding any of these bad Symptoms just enumerated, is pernicious.

A Coldness of the Extremities is known to be destructive, not only by preceding, but by concomitant and subsequent bad Signs. A Refrigeration, or Coldness, of the extreme Parts is usually followed by many other Symptoms of mortal Signification. And here, with respect to the Coldness itself, if this be first moderate, but increases afterwards to a violent and intense Degree, it is pernicious, because, as we have said out of *Galen*, it indicates an extreme Languor of the Faculty. It is no less fatal, in the second place, if this Coldness of the Extremities be succeeded by little or no Degree of Relaxation; as we find it confirmed in the Case of dying *Philiscus*, 1 *Epid. Sect. 3. Agr. 1.* of whom *Hippocrates* observes, "That his extreme Parts were cold on every Side, and never afterwards recovered their Heat;" and of *Silenus*, "who, it is said, on the seventh Day was speechless, and could never from that time have the Heat recalled into his extreme Parts."

A Part, after extreme Refrigeration, becomes livid, and sometimes hardens, in which Circumstance, if it long continues, Death, as was said, is at the Door. The same Event may be predicted from a subsequent Coma, Dotage, Forgetfulness, Deafness, Blindness, Loss of Voice, Convulsions, Tremor, cold Sweats, especially in the refrigerated Parts themselves, (which kind of Sweats seems indeed proper only to a Syncope and Death) Evacuations not good, no way relieving the Patient, or suppressed, Difficulty of Respiration, and the like Symptoms, many of which were observed by *Hippocrates* in dying *Silenus*, after a Refrigeration of the extreme Parts, and described by him as follows: "On the sixth Day he sweated a little about the Head, his extreme Parts were very cold, and grew livid, he was very restless, had no Excretion by Stool nor Urine, and was in an high Fever. On the seventh Day he was speechless, his extreme Parts recovered no more Heat, and he made no Water. On the eighth he had a cold Sweat over all his Body, and, with the Sweat, an Eruption of small, round, red Exanthemata, resembling Vari, which settled without forming an Abscess; he voided, with little Provocation, much thin, and, as it were, indigested Matter by Stool, and with some Difficulty; his Urine was sharp, and excreted with Pain; his extreme Parts recovered some little Heat; his Sleep was but slight and comatous; and his Urine was thin and pellucid. On the ninth Day the Symptoms were much the same. The tenth he refused Drink, was affected with a Coma, and slept in a slight manner, his Stools were the same, but he discharged Plenty of thickish Urine, which deposited a white and branny kind of Sediment; his extreme Parts were again refrigerated. On the eleventh Day he died." We conclude, then, upon the Whole, that a Coldness of the extreme Parts, preceded, attended, or succeeded, by any of these before-mentioned, or the like pernicious Symptoms, gives just Reason for predicting a fatal Event in acute Diseases.

OF PROGNOSTICS FROM A CHANGE OF HEAT TO COLD, AND OF COLD TO HEAT, IN ACUTE DISEASES.

It often happens in acute Disorders, that the whole Body changes from hot to cold, and from cold to hot, sometimes slowly, sometimes suddenly. A sudden Change to Cold, unless occasioned by a Paroxysm, is always bad; since, as it has been observed, it indicates the natural Heat to be either resolved, or by the Multitude of crude Humours oppressed and suffocated to such a Degree, as to be incapacitated, the Vessels being obstructed, for expanding itself externally; or that it is entirely collected in the inward Parts, on account of some malignant Humour, or violent Inflammation, infesting some of the principal Viscera.

We conjecture the natural Heat to be resolved, if there has appeared some preceding Cause of a Resolution; such as a violent and continual Fever, continual Watchings, severe Pains, and immoderate Evacuations of Blood or Humours.

A Suffocation is indicated by a Plethora, in which the Veins and Arteries are obstructed by the Multitude of crude Humours.

That the natural Heat is not expanded externally, we know by all those Signs which indicate the Redundance of the Humours; and that it is retracted inwardly by some acrid or malignant Humour infesting the Mouth of the Stomach, the Heart, or some other noble Part, we conclude from Pains about the Region of the Part affected, Loathing, ANGOR, [see that Word] Nausea, virulent or bilious Vomitings, Despondency of Mind, Anxiety, Watching, the Pulse highly irregular, weak, and low, and the like, as may be observed in those who have the Mouth of their Stomach vellicated by Worms, or some acrid Juice.

When

When some internal Inflammation is the Cause that the Heat retires inwards, it is known by the Heat of the inward Parts; and, by proper Signs, which *Celsus*, as above-quoted, has expressed from *Hippocrates*, where he says, "That a Refrigeration of the extreme Parts, where the internal Parts are parched with Heat in such a manner as to excite a Thirst, is mortal;" for such a Refrigeration has for its Cause an internal Inflammation, and that in a very violent Degree.

In whatever manner, as we said, the Body is refrigerated, it is never good; but it is often highly pernicious, and most of all, if the Coldness, or Refrigeration, be long and intense, or, if an Hardness, or Lividness, accede thereto; for then Death, as was observed, is very near. A sudden and immediate Refrigeration of the actually warm Parts is, also, constantly bad, except that Refrigeration of the extreme Parts, which is occasioned by Nature in her Attempts towards a critical Excretion of the Humours; for it often happens against a Crisis, from the impetuous Course and Conflux of the malignant Humour to some noble Part, that the extreme Parts are refrigerated, and never, or but very seldom, and by slow Degrees, recover any moderate Degree of Heat, after a Propulsion of the Humour to some more ignoble Part of the Body.

On the contrary, for refrigerated Bodies to recover Heat by equal and slow Degrees is a very good Sign; for it shews, that no inward, latent, acrid, or malignant Humour infests a noble Part, that there is no Inflammation in those internal Regions, nor any thing to prevent or intercept the Heat from diffusing itself over all Parts of the Body.

For the Parts to be unequally heated, is never good, and is sometimes esteemed a very bad Sign; but for the outermost Parts of the Body to be suddenly and frequently changed from hot to cold, and from cold to hot, in malignant Diseases, is pronounced by *Hippocrates* very pernicious, and is indeed esteemed more dangerous than the like Mutations in other Symptoms. To the same Purpose we read in *1 Prorrh.* 43. "That sudden Mutation of the remote Parts to either Extreme is bad, as is, also, a Thirst of the like Nature;" that is, subject to the like Permutations. Here *Galen*, in his Comment on the Place, says, that in Diseases highly malignant there is a Mutation of these Qualities into their Contraries in the Space of one Hour, in such a manner, that the Patient shall at one time feel himself as cold as in Winter, and, soon after, as hot as in the Summer-season; and the Reason is, he says, because he has no Heat of his own, but is heated by that of the Fever, which, beginning at the Middle of the Body, and like a Flame spreading itself every-where, kindles an Heat in the extreme Parts, which being spent and transpired, those Parts grow cold again, because the natural Heat is extinguished.

Such swift Mutations of Heat and Cold, and, also, of Colour, and every other Symptom, frequently indicate a Complication of Affections in the Body, which requiring a considerable Length of Time for Nature to subdue, shews, that the Disease will be long and tedious; as is expressly affirmed by *Hippocrates*, *4 Aph.* 40. where he says, that "Mutations in the whole Body, as when the same is refrigerated, and then again heated, signify the Length of the Disease."

In very acute and violent Disorders such sudden Mutations are a Sign that Nature is stinted in its due Time by the Violence of the Disease, and is in imminent Danger of being extinguished before it can put itself in a Posture of Resistance. Upon this Consideration it is, that we are told by *Galen* on the *Prorrhetica*, that Mutations of this Kind in highly malignant Distempers, are mortal, and that they are occasioned by an Extinction of the natural Heat.

Mutations of this Kind, or sudden Changes in other Symptoms, as from a Thirst to an utter Extinction of the same, from a placid Stillness to Restlessness, from Watching to profound Sleep, from the perfect Use of Reason to Deliriousness, or the Reverse of all these, are generally, also, of fatal Signification.

A Change of Symptoms in such a manner as, for Instance, there shall be a Pain of the Head, soon after of the Belly, then of the Legs, and soon after a Cessation of Pain, followed in a short time by a Delirium, which quickly gives place to another Symptom, has for its general Cause a *Metaptosis*, that is, a Transflux of the Humours; for Migrations of the Humour from one Part of the Body to another, or Turgescencies of the Humour appearing successively in different Parts, have the Name of *Metaptosis*, which of itself bears no other Prognostic than does the turgescent Humour. Every Turgescence or Orgasm of the Humours is, however, to be dreaded, since it threatens an Injury to some principal Part; for which Reason *Hippocrates*, *1 Aph.* 22. *Galen*, and indeed all other Physicians, in Turgescencies, or Orgasms of the Humours, have immediately prescribed Purgings even in the Beginning, when all things are in a crude State.

Permutations of Heat, Cold, Colour, and other Symptoms and Qualities, appearing with Signs of Concoction, indicate a

critical Perturbation of the Humours. And in this Sense, perhaps, we are to understand, *Coac.* 125. where it is said, that "Frequent Changes of the Colour with the Heat are of Service vice."

In malignant Diseases these Mutations are of Use, if made for the better, according to that of *Hippocrates*, *6 Epid. Sect.* 6 *Aph.* 16. ἐν τοῖσι παλιμβόλοισι αἱ μετεβολαὶ ὠφελεῖσι, τέτοιαι μεταβάλλειν πρὶν καλεῖσθαι ἐς τὰ πρὶν ποιεῖν, "In deceitful (malignant) Diseases, Mutations are serviceable, if directed to proper Places, before they have received some Injury." [*Foesius* for παλιμβόλοισι reads παλιμβόλοισι, which he owns to be an obscure Word, and renders it in his Notes by *inconstantibus*, inconstant; and in this Sense, which seems most probable, the Sentence may be otherwise translated, thus, "In mutable, and inconstant Diseases, Changes are beneficial, if made in proper Places, and before any Malignity is contracted."] *Prosper Alpinus de Præfag. Vit. & Mort.*

FEBRILE TREMOR.

A Tremor is a Vacillation of the Muscles betwixt the State of Tension, and that of Relaxation, the distending and relaxing Causes suddenly, and involuntarily, succeeding each other; which supposes an alternate Cessation, and Repetition of the Influx of the arterial, and nervous Fluid into the Muscles: In the Beginning of a Fever, therefore, it arises from a partial Stagnation of both the above-mentioned Fluids; but, in the latter End of a Fever, a Deficiency of them, after they have been too much dissipated.

A Tremor, if of long Duration, causes Impediments to the Circulation of the vital Humours, and all their fatal Consequences.

Hence the Diagnostic and Prognostic of a febrile Tremor may be understood; and hence 'tis evident, why a Tremor joined with Coldness, and why a very great Tremor, are of extremely bad Prefage: Why a Tremor accompanies very great Affections of the Mind: Why a Tremor happens about the time of Death: Why it is excited by exorbitant Evacuations of any kind: And why, when the Body has been habituated to a too copious Use of Liquors of any Sort whatever, a Depletion of the Vessels, by Abstinence from these Liquors, is accompanied with a Tremor.

A febrile Tremor is cured by restoring an equable Influx of the arterial Fluid into the Arteries, and its due Pressure upon them, and of the Spirits of the *Cerebellum* into the moving Fibres. This is done in the Beginning of the Fever, by such Remedies as dissolve Viscidities, and restore the Strength, which are specified above: But at the latter End of a Fever, by whatever expeditiously recruits the dissipated Liquids, and corroborates the Fibres and Viscera. See *FIBRA. Boerhaave.*

PROGNOSTICS FROM A TREMOR.

In treating of this Subject, we are first to shew what a Tremor is; and, next, from what Causes it proceeds. *Galen*, *Com.* 1. in *3 Epid.* makes a Tremor a Diminution not of natural, but voluntary Motion; in which the Will or Faculty endeavours to move the affected Part, but fails of its Purpose, through the Imbecillity or Oppression of the same Part, which makes a Motion contrary, at least in some respect, to what was intended.

This kind of Affection differs from a convulsive Motion, which several have mistaken for a Tremor in Acute Fevers, under a Persuasion that *Hippocrates* makes a Tremor to be a convulsive Motion in many of his Patients, particularly in the fair Daughter of *Nerius*, *5 Epid. T.* 50. of whom it is said, καὶ σπασμὸς, καὶ τρομῶδης ὄν. There were Convulsions, also, and she was affected with a Tremor. On some such Consideration, perhaps, it was, that *Sabinus* and *Metrodorus*, two ancient Physicians, said, that a Tremor was a small Convulsion; intending, by this Expression, it is supposed, an Affection complicated of a Tremor and Convulsion; which kind of Tremor is, also, among Physicians, usually called a convulsive Motion, and *Convulsio ex Materia non proportionata*.

Others think that *Hippocrates* sometimes by Tremor means a Rigor; particularly *4 Epid. T.* 13. where he relates of the young Stranger Patient, that on the sixth Day he had a Crisis; on the seventh the feverish Fit returned, and went off with a Tremor; that is, as they would have it, with a Rigor. In this Matter, however, they seem to be mistaken, since we persuade ourselves that *Hippocrates* means a real Tremor, and not a Rigor; if for no other Reason but that the Crisis, on the sixth Day, was not a perfect one, but effected partly by an Excretion, partly by a Translocation of the morbid pituitous Matter upon the Nerves and Muscles, which was the Occasion of the Tremor.

But we have said enough on this Point, and proceed to shew the Generation of a Tremor. And here we are told by *Galen*, *Lib. de Trem. Rig. Palp. & Convuls.* that a Tremor is occasioned

tioned by Weakness, or an Imbecillity of the motive Faculty, which is sometimes infirm of itself, as in old Persons; and sometimes accidentally from other Causes; particularly, as the same Author proceeds, from want of Aliment, from a violent Flux of the Belly, or a profuse Hæmorrhage; also, from long Fasting; by which the Aliment is consumed, and, consequently, the Faculty weaken'd; or from a Resolution of the vital Force, as the Case is in Stomachics, Cardiacs, in Faintings, violent Colds, and a Plethora oppressing the Muscles and Nerves. And he seems to speak much to the same Purpose, *Com. 1. in 3 Epid.* when he makes the Cause of a Tremor to be the Imbecillity of the muscular Force, which is occasioned either on its own Account, or from an oppressive Redundance of Humours, or by Hunger, Lassitude, Watching, Cares, or immoderate Venery; all which resolve the natural Heat, or Strength. But let us hear the same Author more explicitly declaring the Cause and Generation of a Tremor, as follows, in the Place just before quoted. A Tremor, he says, is occasioned not only when the Muscles and Nerves are disorder'd, but when they are in a sound State; when any Person undertakes to heave, or carry in his Hands, something above his Strength. Thus some very strong young Men, in carrying some very heavy Burden, and especially when they have tried to ascend with it by Steps, have been observ'd to tremble in their Legs; and what happens to them from an extraordinary Weight, the same is occasion'd in old and weak Persons by a Weight which is lighter; for that is heavy to them. And a little after, comprehending under one all the Causes of a Tremor, he says, *We had the greatest Reason, therefore, in our Treatise de Tremor. Convull. & Rig. for ascribing always a Tremor to Imbecillity.*

But since the Virtue, or Faculty, is sometimes weak of itself, sometimes from some Passion of the Mind, and sometimes not at all from itself, but from a Load which oppresses it; hence there are three different Causes of a Tremor; which are, a Disorder in the Organs under the Command of the Faculty, the Passions of the Mind, and an heavy Load.

First, then, a want of due Temperament, or a Distemperature, whether hot, cold, dry, or moist, may render the Muscles so weak, as to occasion a Tremor in their Parts: For Heat, if excessive, resolves or dissipates the natural Strength; violent Cold, on the other hand, extinguishes the natural Heat; Humidity, when imbibed in an excessive Degree, oppresses the Muscles; and immoderate Dryness consumes the Humid, which preserves and maintains the natural Heat: Hence some mortal Phrenesies are observed to end in Tremors, from an excessive Desiccation of the Origin of the Nerves, as well as of the Nerves themselves.

Secondly, The Passions of the Mind, as Fear, Sorrow, immoderate Joy, and others, which dissolve the Strength: Or,

Lastly, An heavy Burden, by which the Muscles, being oppressed, are disabled from moving according to the Directions of the Will, may be the Causes of a Tremor.

These things being premised, we proceed to the Prognosis: And here, first, we observe, that some Tremors affect the Patient in the Beginning, others in the End of the Disease. As to the former, we learn from *Galen, Com. 2. in 3 Epid.* they never appear but in a violent Disorder: Tremors, we have said, are occasioned either from Hunger, Lassitude, Watching, immoderate Venery, or an oppressive Quantity of Humours; in which last Case they afford nothing certain alone on which to ground a Prediction in the Beginning, but are only Indications of the Violence of the Disorder; because all Redundances of Humours render a Disease dangerous. Of this Nature was the Tremor of *Pythion, 3 Epid. Agr. 1.* who was taken the first Day with a Tremor of the Hands, an high Fever, and Delirium. Such, also, was the Tremor of *Cherion* observed on the third Day, *3 Epid. Agr. 5.* But though Tremors, in the Beginning of Diseases, indicate only a Redundance of Humours oppressing the Nerves and Muscles, unless they proceed from Hunger, Lassitude, Watching, or immoderate Venery, or are excited by some Passion of the Mind, the Patient, however, will not be free from Danger, if he be visited with a severe, malignant, or even long Distemper, since not only such, but every other, Disorder is to be dreaded in a Patient by any means debilitated. These Tremors, as we said, are no sure Grounds alone for predicting any thing of Certainty concerning the Fate of the Patient; but if they are accompanied with other severe Symptoms, the Case will be dubious, as it was, for Instance, in the Wife of *Emyris, 4 Epid. Tr. 40.* "who, it is said, look'd like one free from any Distemper, and had no Fever; but lost her Wits, and was afterwards seized with a Tremor of the whole Body, attended with a Colliquation, Loathing, Thirst, and a Coldness." The same is further illustrated in the Case of the old Man, *4 Epid. Tr. 41.* who, after a Relapse, fell first into a Tremor of the Lips and Voice, at which time the Skin of his Body was observed to be more tense, and his extreme Parts were cold; he dy'd, as no less could be ex-

pected, tho', perhaps, his Tremor might proceed from Worms, as it was thought to do in some other Instances.

And thus much may be prefaced from Tremors in the Beginning of Diseases; but when they appear without any other Disorder accompanying or immediately succeeding them, they are usually Signs of an Apoplexy: This Preface is hinted to us by *Hippocrates, 4 Epid. T. 36.* where it is said, "That some were seized at the Beginning with a Tremor of the Fingers, and of the Lips in speaking, and, also, of other Parts; but had their Tongue more ready, and Speech more fluent, than usual: They were more remarkable, also, for a Redness of the Face. These, also, drank Wine to a Degree of Intebriation, or were swelled by Vomiting."

Having thus shewn what may reasonably be predicted from Tremors, in the Beginning of Diseases, what we have to say of those which are observed afterwards is, that some of them indicate a critical Translation of the Humours, when Nature propels Part of the noxious Humours from the Viscera to the Muscles: And such Tremors are very good, provided they are attended with Signs of Concoction. Such was the Tremor of the young Stranger, *4 Epid.* before-mentioned, whose Fever went off on the seventh Day with a Tremor, the noxious Humours being critically translated from the principal Parts to the Muscles: It often happens, also, that at the Approach of a Crisis, by Vomiting, there is a Tremor of the lower Lip, which *Galen, Lib. 3. de Cris. Cap. ult.* reckons among the Signs of a critical Evacuation by Vomit.

These, then, are the Tremors observed in Diseases after their Beginning, which we have not the least Reason to dread; but, on the contrary, those which attend burning Fevers, and Inflammations of the Brain, when the Nerves are dried, or when the Origin of the Nerves, that is to say, the Brain, are all mortal. Tremors, from a Dryness of the Nerves in Phrenesies, are mortal, and seem to be proper to deadly Phrenesies. Justly, therefore, was it said by the Author of the *1 Prorrh. T. 9.* "That phrenetic Affections end in Tremors," or Tremors follow mortal Phrenesies. *Galen*, also, in his Comment on the Place, says, "That a Tremor succeeds mortal Phrenesies; for Infirmities of the Nerves are of very long Continuance in Phrenesies, on account of the Dryness of the Affection, the Faculty being worn out with Watching, and much Motion, and the Nerves immoderately dried, which are the Causes of Tremors." In a Phrensy, therefore, you see, all Tremors are mortal; and much more, if they appear attended with Convulsions, which are, also, the usual Attendants of vehement Phrenesies. But, in the Beginning of a Phrensy, a Tremor is not mortal; for a Trembling of the Tongue and Speech are then only Prognostics of a Delirium, as we are taught by the Author of *1 Prorrh. 19.* In obscure and mild Phrenesies Tremors are, also, usually observed, from a Resolution of the animal Faculty, and are all pernicious: Of these Kinds of Phrenesies we have the Author of *1 Prorrh. pronouncing, T. 34.* where he tells us, that "Tremulous, obscure, mild, and tractable Deliriums, are very phrenetic; as was the Case of *Didymarchus, in Coos.*" For these are occasioned by a Resolution of the Faculty. In the last Place, a Tremor, from a considerable Injury of the Brain, by which the motive Faculty, for the Reason given before, is debilitated, is mortal in the highest Degree; of which we have an Instance in the fair Daughter of *Nerius, 1 Epid. T. 50.* *Prosper Alpinus de Præfug. Pit. & Mort. Agravat.*

FEBRILE ANXIETY.

Anxiety is caused by some Impediment to the Egress of the Blood from the Heart; and, in consequence of this, from an Impossibility of its due Circulation through the Ramifications of the Pulmonary Vessels, and those of the Aorta: And these arise either from a spasmodic Contraction of the small Vessels, or an inflammatory Spissitude of the Blood, which renders it incapable of circulating through the proper Canals. Or the same Symptom is produced by an Impediment to the Passage of the Blood through the Vena Portæ, from the same Causes: Since, therefore, all the Blood conveyed to the Abdominal Viscera by the Cœliac and Mesenteric Arteries, and thence to the Vena Portæ by the Veins, cannot pass farther, it must there stagnate, distend the Vessels, and resist the fresh Influx of Blood into the Arteries last-mentioned, thereby producing the most fatal Consequences. On this account it is absolutely necessary, in all acute Distempers, to observe, with the utmost Diligence, the Causes of both these Species of Anxiety; and, by all possible means, to remove them.

If such an Anxiety continues long about the Heart, and vital Parts, it will produce polypose Concretions, Inflammations, and sudden Gangrenes, accompanied with intolerable Uneasiness, and soon succeeded by Death: But that, whose Cause is situated in the Hypochondria, will produce an excessive Sick-

P Y R

ness at the Stomach, the other Viscera, mean time, having not so acute a Sensation: This is succeeded by sudden Putrefactions of the Blood, contained in the large and weak Vessels about the Liver; whence Gangrenes, Putrefaction of the Liver, and a fatal Dysentery, arising from such a Putrefaction.

From what has been said, the Physician may understand the Cause and Nature of such an Anxiety, and what Presages may hence be drawn; and, at the same time, he will distinguish betwixt that Species of Anxiety, excited by some nervous Disorder only, without a Fever, and that which is caused by an acute Inflammation, previously discovered by its proper Signs. And by comparing this with the Violence and Duration of the Symptom, and the Part where the Disorder resides, he will be enabled to discover its Nature; and to learn why, in all Diseases, at the Approach of Death, the last Scene is closed with extreme Anxiety; why a convulsive Anxiety is not attended with much Danger, but an inflammatory Anxiety with a great deal; and why Uneasiness, Restlessness, Sighing, Anhelation, and obstinate Want of Sleep, in suppuratory or inflammatory Distempers, are the Forerunners of Death.

Hence, likewise, it is evident, that various Methods of Cure are required, in order to mitigate the Severity of this Disorder; in the Discovery and Application of which the Physician will be duly instructed by a previous Knowledge of the particular Nature of the Symptom.

When, therefore, it is discover'd, that the Affection is excited by Spasms, it is to be removed by rendering the acrid, irritating Matter, of whatever Nature, mild; by expelling it, by means of Vomits, Cathartics, Sudorifics, Diuretics, and Abstersives; by diluting with warm aqueous Fluids; by calming the Affections of the Mind; by relaxing the Fibres, Vessels, and Viscera; and by moderating the Tumult of the nervous Fluid with Anodynes and Narcotics.

Boerhaave recommends the following Medicines, as Vomits, proper in Fevers.

Take of Oxymel of Squills, three Ounces; and of distilled Succory-water, five Ounces: Mix for a Draught.

Take eight recent Asarabacca-leaves; infuse for four Hours, in the distilled Water of Carduus Benedictus; and exhibit five Ounces of the expressed Tincture for a Draught.

Take of white Vitriol, twenty-five Grains: Reduce to a Powder, to be exhibited in a small Quantity of Beer.

Purgatives proper in Fevers are these following:

Take of the Crystals of Tartar, five Drams: Reduce to a Powder, and exhibit in warm Whey.

Take of the Crystals of Tartar, two Drams; of Sal Prunellæ, twelve Grains; and of Sal Polychrestum, sixteen Grains: Reduce to a Powder, to be taken for a Dose.

Take of Scammony, seven Grains; and of distilled Succory-water, half an Ounce: Make an Emulsion; to which add twelve Drams of the solutive Syrup of Roses, with Sena, to be taken for a Draught.

Take of Tamarinds, three Ounces; of the Troches of Agaric, three Drams; of Sena-leaves, one Dram; and of Figwort, half an Ounce: Boil in Water, and to eight Ounces of the expressed Liquor, add half a Dram of Sal Prunellæ, and an Ounce and an half of solutive Syrup of Roses, with Sena: Of this let the Patient take two Ounces, every Half-hour, till he begins to be purged.

Take of Prunes, four Ounces; of Tamarinds, one Ounce; of Sena-leaves, two Drams; and of Figwort, six Drams: Boil with Water for half an Hour; express through a Cloth, and, with twelve Ounces of the Liquor, mix two Ounces of the Syrup of Succory with Rhubarb: Of this Preparation let the Patient take three Ounces every Half-hour, till he begins to be purged.

Take of the Eleætarium Diaprunum of *Sylvius*, one Dram and an half; and of the Powder of Sena-leaves, one Scruple: Make up for a Bolus.

The same Intention is, also, answer'd by the following Medicines, exhibited in the Doses specified. The Eleætarium Diaprunum, or Cholagogum, of *Sylvius*, half an Ounce; the Confectio Hamech, four Drams; the Hiera Pica of *Galen*, one Dram and an half; Lenitive Eleætuary, one Ounce; and Eleætuary of the Juice of Roses, half an Ounce.

P Y R

Sudorifics proper in Fevers are always of a diluting and aperient Nature, and may be prepared in the following manner:

Take of the Roots of Smallage, half an Ounce; of the Roots of Burdock, and China-root, each one Ounce; of the Roots of Succory, Grass, Navew, Parsley, Rape, and Butchers-broom, each half an Ounce; of Sarsaparilla, one Ounce; and of Vipers-grass, half an Ounce; of the Leaves of Sorrel, Succory, Endive, and Dandelion, each one Handful; of Elder-flowers, two Ounces; and of the bruised Seeds of Smallage, and Parsley, each one Ounce: Boil in three Pints of Water, of which the Patient is every Quarter of an Hour to drink three Ounces warm, till a gentle Sweat is excited.

After this Formula a great many more may be prepared. Diuretic Medicines, proper in Fevers, are these following:

One Part of recent Milk, mixed with three Parts of Water. Whey; Buttermilk; the Juice of the Birch-tree; the recent Juices of mature Summer-fruit, diluted in Water; Nitre; antimoniated Nitre; Sal Polychrestum; and the preceding sudorific Decoctions, used with a diuretic Regimen.

Absterfive Medicines, proper in Fevers, are the same with those already mentioned.

If the Anxiety is excited by an inflammatory Viscidity of the Blood, this Viscidity must be dissolved and diluted; the Vessels must be relaxed; and the Impetuosity of the vital Fluid must be checked. With these Views, let the Patient drink copious Draughts of aqueous Liquors, in which farinaceous Vegetables have been boiled, impregnated with Honey and Nitre, somewhat acceſcent, and slightly aromatic. Let Fomentations, Cataplasms, Epithems, and Plaisters, composed of diluting, relaxing, emollient, and anodyne Ingredients, be applied to the Region affected. Let Clysters, at the same time, made of the like Ingredients, and small in Quantity, be frequently injected, and, if possible, be retained a long time. And let the Vapour of warm Water, mixed with Emollients, be perpetually drawn into the Lungs, through the Mouth and Nostrils.

And let it be remarked, that this Symptom, above all others, requires a safe and immediate Cure, on account of the Severity thereof, and its Consequences. *Boerhaave*.

PROGNOSTICS, OR PRESAGES, FROM AN ANXIETY.

There occur in the *Prognostics*, *Prorrhetica*, and all the Books of *Hippocrates*, relating to Prediction, four synonymous Words, ἀλυσία (*Alyce*), ἀλυσμός (*Alysmus*), ἀπορία (*Aporie*), and ζῆν (*Aze*), or ἀσῆ (*Aſe*): These all signify the same thing which we express by *Anxietas* (Anxiety), *Inquietatio* (Restlessness), *Implaciditas* (Uneasiness), and *Jactatio* (Jactation, or Tossing). [To these may be added *ὑποφροία*]. Some indeed would have *Alyce* to have respect to an injured Respiration, when it is too frequent and irregular; but it appears from *Galen*, to have relation to a vitiated Decubiture, for, *Lib. de Humoribus*, he says, “He (*Hippocrates*) called it *Alyce* (an Anxiety) though many call it *Dysareſtia* (a Self-dispiciency), “for they say, those Patients are under an Anxiety (ἀλυσία), “who cannot continue in one Posture of Decubiture, but are “continually changing their Position, because the present is “always uneasy to them.” And he repeats the same in his Comment on 7 *Aph.* 56. By these Terms, then, we understand no more than a vitiated Decubiture, when, through the Violence or Malignity of the Disease, the Sick is perpetually shifting his Position, and cannot in the least rest in one Place, but moves, tosses, and throws himself about, in various manners; sometimes raising himself up, then sinking down, sometimes on one Side, sometimes casting himself on his Belly, and sometimes on his Back, but never resting in one Place or Figure of Decubiture.

An Anxiety proceeds either from the Stomach, labouring under some Disorder, or oppressed with Food, and under a Nausea; or from a great Inflammation of one of the internal Viscera; or an Imbecillity, incapable of sustaining the Disease; or from an occult Malignity infesting the Heart, as in a pestilential Fever; or from an Agitation of the Matter in the turgent Veins about the Præcordia; or, lastly, from a critical and violent Perturbation, occasioned by an Intumescence of the Humours, tending to an Excretion.

First, then, an Anxiety may be owing to some Indisposition of the Stomach, or an Oppression of that Part by an immoderate Quantity of Food, as appears from *Hippocrates*, *de R. P. I. A.* and *Galen's* Comment on that Book. Thus, when the Patient, after long Abstinence, the Disease not being past its Height, feeds too freely; or when the Mouth of the Stomach,

as *Galen* says, *Com. in Aph. & in Lib. de Humor.* contains some Humour particularly offensive, which Humour is not much in Quantity, nor diffused in the open Cavity of the Stomach, but immersed in its Coats; or, lastly, which is perhaps the same, when, as that Author says, *Com. in Prorrh.* the Mouth of the Stomach is vellicated by depraved Juices: An Anxiety, he there tells us, is known to proceed from the Stomach by the Attendance of a Nausea.

In the next Place, as Anxiety is produced by the Violence of the Disease, in hot and burning Fevers, especially at their Height, when the Sick becomes restless and impatient, through the Vehemence of the febrile Heat, and, what is no small Sign of Malignity, has his Anxiety occasioned by a Corruption of the bilious Humours swelling and estuating in the larger Veins. This Anxiety is most apparent, when one of the Viscera is affected with a great Phlegmon, or Erysipelas; in which Circumstance the Patient is not very hot in his outward and extreme Parts, but burns inwardly.

An Anxiety may, also, be owing to Weakness, as we are told by *Galen*, *Com. in 1 Prorrh.* when the Faculty is oppressed by the Body; as when immoderate Evacuations have preceded, or the Faculty is extinguished by the Malignity of the Distemper.

Lastly, The Patient becomes seized with an Anxiety, from a Commotion of the Humours vellicating the Parts, in order to a critical Excretion: Hence we are told by *Hippocrates*, 2 *Aph.* 13. "That they who undergo a Crisis, have a severe Night before the Fit." For when Nature intends an Excretion of the Humours, she raises a Commotion and Perturbation in the whole Body, which must, of Necessity, create a Restlessness and Anxiety in the Patient. To this we may add, that those who labour under a Suppuration, are often molested with this Symptom, either from a Decay of Strength, and Depression of Nature, or from the Use of Respiration much injured; or an Estuation in the Thorax; or from the Acrimony of the Pus corroding and vellicating the sensible Parts; or from an acrid Distillation from the Head upon the Mouth of the Stomach.

We have given you the Causes of an Anxiety, and proceed to speak of the Prognostics, which may be formed from this Symptom: And, in general, we say, with the Author of 1 *Prorrh.* 39. 76. and in other Places, that an Anxiety is always bad, except when it is critical, or precedes an happy Crisis: There are, however, some Anxieties from which nothing certain can be prognosticated; such are those occasioned by some Disorder of the Stomach, which, though bad, never afford, by themselves, any sure Prognostic of the Death or Recovery of the Patient. And indeed such an Anxiety as is excited by some Affection of the Stomach, is distinguished, according to *Galen*, *Com. in 1 Prorrh.* from other Anxieties by *ναυσία*, a Nausea, and *ἐμέτης*, Vomiting; because they who are molested with this Sort of Anxiety have a continual Nausea, and Inclination to vomit; whence it is justly said, by the Author of the *Coaca Praesagia*, that an Anxiety, with a Loathing and Nausea, indicates an Affection of the Stomach. Now in Intermittent Fevers, and in many other Diseases, an Anxiety, or Inquietude, with a Loathing and Nausea, is far from being malignant, since the Anxiety is often removed by Vomiting. Of this we have an Instance given us by *Hippocrates*, 7 *Epid.* T. 102. "The Wife of *Theotimus*, he says, labouring under a Semitertian, was seized with an Anxiety, Vomiting, and Horror, all at once; and as the Fit came on with a Thirst, in the Progress of the Fit, the Heat increasing with the Fever to a vehement Degree, she drank Hydromel; and, after Vomiting, was freed from the Horror and Anxiety together." An Anxiety and Inquietude, therefore, attended with a Loathing and Nausea, are not much to be dreaded, and least of all, when, by the Benefit of Nature, or the Assistance of Art, a Vomiting excited, relieves the Patient from them; as, on the other hand, an Anxiety which is increased by Vomiting, is not usually void of Malignity. Thus, also, in the Height of burning Fevers, under the greatest Estuation, an Anxiety is not to be feared, because it is a proper Symptom of that kind of Fevers. Anxieties of a good Sort are, also, frequently observed before an happy Crisis; for, at the Approach of a Crisis, the Patient grows restless and turbulent, and for very good Reasons, since the whole Body is then thrown into a Commotion and Perturbation, while Nature attempts an Excretion of the morbid Humour: But such critical Anxieties and Inquietudes are distinguished from others by critical Signs, and chiefly by a supervening Rigor, succeeded by a copious Sweat, or by plentiful Vomiting or Purging, or a copious and critical Hemorrhage. With Respect to this Subject, we read, *Coac.* 19. that "Such as labour under an Horror, Anxiety, and Lassitude, with a Pain in the Loins, fall into a Flux of the Belly." And *ibid.* 111. "They, who, after Watchings, are seized with an Anxiety, may expect an Hemorrhage

"from the Nose." An Anxiety, also, often happens, when Nature makes Efforts to propel the putrid and malignant Humours to the Skin, as in an Expulsion of Exanthemata, after whose Appearance the Anxiety ceases.

These, then, are the Anxieties from which we have no Reason to be apprehensive of any Danger in a Disease. But, as an Anxiety under a burning Fever, especially at the Height, and utmost Intensity and Estuation, at which time it is common to all, merits not our Concern, so, on the other hand, a malignant Anxiety observed in Fevers, where the outward Parts are in no extraordinary Degree of Heat, whilst the internal Parts and Viscera are in a burning State, is justly to be dreaded. Such an Anxiety seems to be a proper Symptom of malignant Fevers, which are mild and gentle, as to outward Appearance, but full of inward Perturbation and Uneasiness, occasioned, as we said, either by some violent Inflammation of one of the Viscera, or by an Erysipelas, or by an Estuation and Effervescence of the highly putrid Humours in the Veins about the Præcordia, or from mere Weakness, or from an extraordinary Redundance of crude Humours, with which Nature seems to be oppressed: In such a Circumstance the Patient in a Fever labours under a remarkable Anxiety, which we take for no slight Indication of Malignity.

But the "worst of all Anxieties, according to *Coac.* 2. are "those which are attended with Refrigerations," particularly of the extreme Parts, the Feet, Hands, and Ears. To this Purpose we find *Hippocrates* thus speaking, in his Book of *Prognostics*: "If the Patient, he says, lies with his Feet bare, and not very hot, and throws about his Hands, Neck, and Legs, in an unequal and disorderly manner, it is a bad Sign; for it indicates an Anxiety."

An Anxiety, under Refrigerations of the extreme Parts, where Heat is not to be recalled, is mortal in the highest Degree, and shews Death to be at hand: Thus it proved in the Case of *Silenus*, 1 *Epid.* Sect. 3. *Ægr.* 2. and of the Woman who lay ill in *Foro Mendacium*, 3 *Epid.* Sect. 2. *Ægr.* 12.

No less pernicious is accounted an Anxiety which appears attended with bad Sweats, on a critical Day. Bad Sweats, according to *Hippocrates*, are all such cold Sweats, as in a continual Fever appear on the upper Part of the Body, as the Head, Neck, and Clavicles. Of such an Anxiety we read, 1 *Prorrh.* 27. where it is said, "That a Restlessness and Uneasiness [*δυσέπειας*] with Refrigerations, and a Sweating of the upper Parts, where the Patient is not free from a Fever, prognosticate a Phrensy and Death, as in the Instance of *Aristagoras*." And it was observed, by *Hippocrates*, of *Silenus* before-mentioned, "That on the sixth Day he sweated a little about the Head, his extreme Parts were cold and livid, and he was under a great Anxiety." And of the Woman mentioned, also, before, he says, "On the seventh Day she had a new Fit of a Rigor, succeeded by an high Fever, and an intense Thirst, with an Anxiety: Towards Evening she had a cold Sweat over all her Body, with a Coldness of the extreme Parts, and no Return of Heat." Anxieties, therefore, under Refrigerations, attended with bad Sweats, are destructive; which is the same thing as if he had said, that Anxieties, with bad Signs, are bad; and with pernicious Signs, pernicious and deadly. Now, that cold Sweats of the Head, and Refrigerations of the extreme Parts, are pernicious Signs, we are taught by *Hippocrates*, *Coac.* 572. 573. *Prognost.* & *Lib. de Crisibus*.

Anxieties on critical Days afford surer Prognostics, and are esteemed very bad, when succeeded by no salutary Evacuation, as by an Hemorrhage from the Nose, or by Stool, Vomit, or Urine, but especially by Sweat. For Confirmation hereof we read, 1 *Prorrh.* 61. "Refrigerations of the whole Body, attended with an Anxiety, but no Sweat, are bad Signs." And of Anxieties, attended with bad Evacuations by Stool, we are told by *Hippocrates*, *Lib. de R. V. I. A.* "That such Stools [spumous, and saturated with pure Bile] were very pernicious on many Accounts, as not extinguishing, but increasing the burning Heat of the Hypochondria, and exciting a Restlessness, Anxiety, and Jactation of the Members." Which *Galen*, in his Comment, tells us, are Symptoms of an Inflammation, affecting the Hypochondria themselves. Of the same Symptom, in Conjunction with Vomiting, it is said, 1 *Prorrh.* 62. "Pure and unmixed Vomiting, attended with Anxieties, are bad."

An Anxiety under an utter Decay of Strength, from immoderate Evacuations, is pernicious in the last Degree. Such a Sort of Restlessness and Uneasiness is observable in many dying Persons. We have an Instance, 7 *Epid.* T. 12. in the Person of *Chartades*, who (after vast Hemorrhages by Stool) was affected with an Anxiety about the Mouth of the Stomach, [*ὀπί τῆς κοιλίας*] a slight Sweating in almost every Part of his Body, and a slow Fever. At first he seemed to have the free Use of his Reason; but, as the Day went for-

ward,

ward, the Anxiety and Uneasiness increased upon him, and he fetched his Breath somewhat shorter: He was more hearty and obliging in his Salutations, and Receptions of Persons, than Occasion required, and some Symptoms of a Lipothymy appeared, which were not at all relieved by drinking Ptisan, or Barley-water [*τὸ ἀπὸ κριθῶν ὕδωρ*]: Towards Evening he drew his Breath very thick, with much Agitation and Tossing, and Turning from Side to Side, without the least Intermision, or Rest."

In acute Diseases, if a Pain, affecting some ignoble Part, ceases, and the Patient is afterwards taken with an Anxiety, it is of bad Prognostication. An Instance of this we have in the bald Man of *Larissa*, 3 *Epid. Sect. 3. Ager. 5.* "Who, *Hippocrates* says, on the third Day, was freed from the Pain in his Thigh, but was under much Perturbation and Deliriousness, with great Jaundition and Uneasiness; and the fourth Day about Noon he died."

For a Person, after receiving a Wound or Blow, to be under an Anxiety, or very restless and uneasy, is, also, a bad Sign; as was observed by *Hippocrates*, 5 *Epid. T. 59.* in one who received a Stroke on the Head with a Stone; and in another, who had his Liver pierced with a Dart. *Ibid. T. 61.*

Anxieties, also, are often observed attendant on mortal Phrensies, as we learn from the Author of 1 *Prorrh. 12.* where he says, "That in the Beginning of a Phrensy for the Patient to be mild and gentle, but often shifting from Place to Place, is a bad Sign."

We conclude, therefore, from the Whole, that all Anxieties are bad, except those which precede a salutary Crisis, and such as proceed only from an Affection of the Stomach, and are not preceded, accompanied, or succeeded by other pernicious Signs; or such as were observed in the Cases of *Silenus*, the Woman in the *Forum Mendacium*, the bald Man of *Larissa*, and *Chartades*, before-related, *Prosper Alpinus, de Præsig. Vit. & Mort. Aegrot.*

FEBRILE THIRST.

Thirst is excited by a Dryness of the Solids, an Immeability of the Fluids, and a saline, alkaline, or bilious and oleous Acrimony.

Thirst, therefore, always witnesses that some one of these Causes is present; and, on this Account, it prognosticates all the Evils which are capable of being produced by such Causes.

Care must, therefore, be taken, to remove immediately this Symptom of Thirst, particularly in Acute Distempers.

Thirst is removed, first, By drinking frequently, and in small Quantities at a time, aqueous, subacid, nitrous, demulcent, warm Liquors; of which kinds are the following.

Take of common simple Barley-water, forty Ounces; of the Rob of Currants, four Ounces; as many Drops of the Spirit of Salt, as is sufficient to procure a grateful Acidity; and of distilled Cinnamon-water, one Ounce: Mix, for ordinary Drink.

Four Ounces of the Robs, Jellies, or Syrups, of the following Fruits taken as above, may be used: The Robs, Jellies, or Syrups, for Instance, of Currants, Quinces, black Cherries, Barberries, Mulberries, Raspberries, Pomegranates, Lemons, Citrons, common and China Oranges. Thus,

Take of the Jelly of Quinces, one Ounce; of the Diamoron of *Nicolaus*, two Ounces; of the Syrup of Citron-juice, one Ounce; of the distilled Waters of Borage, and Baum, each four Ounces; of common Water, twenty-four Ounces; and of Rhenish-wine, three Ounces: Mix all together.

Drinks proper in a febrile Thirst are, also, these following: Milk and Water, Whey, Butter-milk, Small Beer, Coffee, and one Part of Wine mixed with twelve Parts of pure Water, and a little Lemon-juice.

Secondly, Thirst is removed, by washing the Nostrils, and gargarizing the Mouth and Fauces, with the same kinds of Fluids as those above recommended.

Thirdly, By applying Fomentations, Epithems, and Cataplasms, of the same Nature, to the Region of the Hypochondria.

Fourthly, By the Use of similar Clysters, retained a considerable time.

But if a very great Thirst is accompanied with extreme Weakness, it will be safe to exhibit vinous, or more spirituous Liquors, mixed with those above recommended. Thus,

Take two of the best Citrons, take out the Seeds, pare off the yellow Bark, throw away the whole fungous Substance, and, bruising the yellow Bark and the Pulp to-

gether, put them in thirty-two Ounces of simple Barley-water; to which add, of the Syrup of Mulberries, an Ounce and an half; of Rhenish-wine, eight Ounces; and of toasted Bread, two Ounces: To be preserved in a close earthen Vessel. Or,

Take of the Syrup of Lemons, three Ounces, of the best Spirit of Wine, one Ounce and an half; of Rhenish-wine, four Ounces; and of pure common Water, fourteen Ounces: Mix all together, for ordinary Drink. *Boerhaave.*

PROGNOSTICS FROM THIRST IN ACUTE DISEASES.

It is natural for Persons under acute and burning Fevers to be molested with Thirst, as conflicting with a hot and dry Distemper, since it is much worse for the Patients, in such Cases, not to thirst at all, as it is, also, for them to have their Urine of no Colour, but thin and aqueous. It is best, therefore, on all Accounts, since the Reason of the thing requires it, that Persons under hot Distempers should be affected with Thirst: But immoderate and intense Thirst in no Case is good, as indicating a vehement and burning Heat in the internal Viscera; but, on the contrary, is, for the most part, a bad and dangerous Symptom, and signifies that the Disease is very strong and urgent upon the Patient, and difficult to be subdued; and that Nature is in Danger of sinking under the Weight which oppresses it. We may, therefore, safely pronounce an immoderate Thirst, as it is an Indication of the extraordinary Strength of the Disease, a dangerous and formidable Symptom in acute Disorders, but most pernicious, and fatal, when it precedes, accompanies, or follows other very bad Signs; in which Case it is a certain Presage of Death.

But from a Thirst alone, as well in acute as other Diseases, we can prognosticate nothing with Certainty, but regard it only as a Sign of the Strength and Violence of the Disease. With Respect to this Subject may be considered, what *Hippocrates* writes, 1 *Epid. Sect. 2. Stat. 3.* where he says, *That the burning Fevers (of that Constitution) afforded Signs in the Beginning in what Subjects they would prove mortal; for the Patients were first seized on a sudden with a high Fever, attended with a small Degree of a Rigor, they were incapable of sleeping, were very restless, and afflicted with a Thirst and Nausea.* Such was the Case of *Philiscus*, 1 *Epid. Sect. 3. Ager. 1.* of whom we read, *That on the third Day in the Morning, and till the Middle of the Day, he seemed to be free from a Fever; but towards Evening he was seized with a high Fever, attended with Sweat, and a Thirst, a Dryness of the Tongue, and a Blackness of the Urine.* In this Case, a Thirst, attended with black Urine, and other bad Symptoms, signified that the Disease would prevail over Nature, and prove mortal. The like Thirst was observ'd by *Hippocrates* in *Pythion*, 3 *Epid. Sect. 3. Ager. 3.* who, he says, *was seized with a vehement Rigor, succeeded by a high Fever, a Dryness of the Tongue, a Thirst, Redundance of Bile, black Urine, which had an Encaema [see the Word], but no Hypostasis.* This Thirst continued upon him till the fifth Day, accompanied with other pernicious Signs, particularly a Coldness of the extreme Parts, and a Loss of Voice. We conclude, therefore, that an intense Thirst, accompanied with other bad Signs, is of the most fatal Consequence. Of this Nature, perhaps, was the Thirst which the Wife of *Hermioleus* endured, 7 *Epid. T. 13.* who, it is said, *was affected with a Trembling of the Hands, and a Shaking of the Head, a depraved Cast of the Eye, with a violent Thirst; and as soon as she had drank, still craved for more Drink, and snatched the Cup from the Attendant, and took large Draughts, and would not suffer the Cup to be pulled from her; her Tongue was dry, and very red; and, when under a Tremor, she would put both Hands to her Mouth, and chew them.* Like to this was the Thirst of *Aristocrates*, who died in four Days of a pestilential Carbuncle. We conclude, upon the Whole, then, that an immoderate Thirst in acute Diseases is never good, oftentimes bad, and, when attended with other bad Signs, most pernicious and fatal.

WHAT IS TO BE PROGNOSTICATED FROM A REMOVAL OR ABSENCE OF THIRST IN DISEASES.

A moderate Thirst in Diseases is always good; and to thirst more or less, as the Reason of the thing, and the Nature of the Disorder, with respect to Heat, require, can be no bad Sign: But for the Patient to be molested with an intense and continual Thirst, is never a good Prognostic; as, on the contrary, not to have the least Desire of drinking, when labouring under a hot and dry Distemper, is highly pernicious, and fatal; and the more, when the Thirst, with which they were before afflicted, ceases, without any Reason to be given for it. The Author of 1 *Prorrh. 57.* tells us, that "a Thirst in acute Diseases, which ceases for no Reason, is bad." And *Galen*, in his Comment on the Place, endeavouring to account for it, has

these Words: "When, therefore, it happens, that the Thirst cannot be removed, either by Vomiting, Sweating, or Purging, or by a critical Abscess, so as that the Disorder itself is not mitigated, but that the Sense thereof is blunted or abated, this is no good-Sign; but if the Thirst ceases whilst the Tongue continues dry, and the Urine crude, this is a surer Evidence of the Malignity of the Disease; and still the more, if no refrigerating or moistening Remedies have been outwardly applied; a proper Use of which Medicines, in acute Diseases, is not so much to extinguish a Thirst, as to abate it. But in acute Distempers, if the Thirst be perfectly removed, it is pernicious in the highest Degree." From this Passage of *Galen* it is obvious to every one, that it is highly pernicious, in acute Disorders, for a Thirst to cease for no manifest Cause, as, for Instance, a beneficial and salutary Evacuation or Pur-gation, but in a crude State of the Distemper.

But this want of Thirst, in such Cases, is most fatal and deadly, when attended with other destructive Symptoms. To this Purpose we find *Galen* discoursing, in his Comment on the first of the *Epidemics*: "As an Accumulation to all those pernicious Symptoms under which the Patients laboured, must be reckoned, that though they were afflicted with a violent Heat, and Estuation, they had no Thirst; but as for those who were at first molested with a violent Thirst, and were afterwards freed from it, such an Event must be necessarily owing to one of these two Causes; that is, either a Solution of the Disease, or an Extinction of the Faculty, in such a manner, that the Sick are no longer sensible of the Evils under which they suffer: But the first was not the Case in those Disorders, since these Symptoms prov'd mortal in the Event."

They who labour under acute Diseases, are not thirsty; first, On account of a cold and moist Humour distilling from the Head upon the Stomach; whence *Hippocrates* justly says, 4 *Aph.* 5. that they who are molested with a Cough, are not very thirsty, because the Phlegm, which distils from the Head upon the Stomach, takes off the Thirst: And this want of Thirst is observed in some pleuritic and peripneumonic Patients; from which, however, nothing can be prognosticated with Certainty, since the Sick, in such Cases, are distinguished from others, who are not afflicted with Thirst by their Tongue, which is not dry and parch'd, but moist and soft, from the Phlegm which moistens it.

Secondly, A want of Thirst in very hot Distempers, where the Patient is in a very high Estuation, proceeds either from a Delirium, which renders him insensible of what he suffers; or an Extinction of the appetitive Faculty of the Stomach, or from both Causes. Of Persons in a Phrensy, the Author of 1 *Proorrh.* 16. says, *Little Drinkers, who are startled at the least Noise, are subject to Tremblings.* And *Galen*, in his Comment, tells us, that *Phrenetic Patients are βραχυπότες, that is, have little Desire to drink, though their Disorder be of a hot and dry Nature, and their Tongue rough with excessive Dryness.* But we are taught by *Hippocrates*, that such Patients are disorder'd in their Senses, 2 *Aph.* 6. where he says, *They who are affected with Pain in any Part of the Body, and yet have but little Sense thereof, have their Reason disturbed.* Hence he says of those Persons who labour'd under a Phrensy, and whose Cases he describes, 3 *Epid. Sect.* 3. that they were all free from a Thirst. And he gives a particular Instance of this kind in the same Book, Case the last, of the young Man of *Melibæa*, who labour'd under a Phrensy, unattended with a Thirst.

In such Cases as these, then, not to thirst, is a bad Sign; and, if attended with others of the like Nature, mortal; but without these nothing certain can be prognosticated from it: For there are many Persons in a Delirium who never call for Drink, and yet recover, though, it is true, they are such as have no violent Delirium, nor other concomitant destructive Symptoms, particularly, which is much to be regarded, a Dryness of the Tongue. But where that Part is not only very dry, but, also, black and foul, not to thirst is mortal in the highest Degree, as it shews, that the Disease is very strong and urgent upon the Patient; and that Nature is ready to sink under its Burden.

In a very hot Distemper, not attended with a Delirium, but a great Dryness and Aduftness of the Tongue, a want of Thirst is infallibly mortal, as it demonstrates the Faculty to be extinguished; and with the more Certainty, if the Thirst, under which the Patient laboured before, ceases unaccountably, and for no Reason; for this is a sure Indication of the Extinction of the Faculty. And we have very good Reason to assert it fatal, since it is impossible for Nature to be oppressed, and totally subdued, by the Disease, without the Appearance of several other mortal Signs. Thus it happened in the Case of *Erasmus*, 1 *Epid. Sect.* 3. *Agr.* 8. "who had a continual Fever, with Sweating; an Elevation and painful Tension of the Hypo-

chondria; black Urine, which had a round Enæorema, but no Hypostasis, a great Dryness of the Tongue, but no extraordinary Thirst." Another Instance is in *Hermocrates*, 3 *Epid. Sect.* 1. *Agr.* 8. "whose Tongue at first was parch'd with Heat, and soon after he was seized with Deafness, and was incapable of sleeping, but not very thirsty." And a little after we read, "On the twentieth Day he had an Aversion to all Food, had the perfect Use of his Reason, but could not speak; his Tongue was very dry and parch'd, but he had no Thirst; and he slept, but labour'd under something of a Coma." The same was observ'd in the Virgin Daughter of *Euryanax*, 3 *Epid. Sect.* 2. *Agr.* 6. who through the whole Course of her Fever, of which she died, had no Thirst, but abhorred Food. From these, and the like Instances, we conclude, that in acute Diseases it is always a bad Sign for the Patient to be without a Thirst, when he has been freed from it in an unaccountable manner; but when a Thirst ceases for good Reasons, which may be given, such a Cessation is so far from being bad, that, on the contrary, it is a very good Sign; as it proved, for Instance, in the Person who lay sick in the Garden of *Dealces*, 3 *Epid. Sect.* 1. *Agr.* 3. who had several times, in the Course of the Disease, been thirsty and delirious, but was, at last, for a very good Reason, which was the Solution of the Disorder, freed from his Thirst. On the twentieth Day, says *Hippocrates*, he fell into a Sleep, was restor'd to the perfect Use of his Reason, sweated, and was freed from his Fever and Thirst. This Person underwent several Crises, which were preceded by a Thirst, a Dryness of the Tongue, and a Delirium; and these Symptoms were all alleviated, and the Thirst, in particular, diminished, after a Crisis, as the Reason and Nature of the thing required: But a want of Thirst, contrary to Reason, or just Expectation, and attended with other pernicious Signs, is destructive and fatal, in the highest Degree. *Prosper Alpinus, de Præfag. Vit. & Mort. Agr.*

A FEBRILE NAUSEA.

A Nausea is an ineffectual Effort to vomit, accompanied with an Idea of Horror; it is, therefore, excited by slight Convulsions of the muscular Fibres of the Fauces, Oesophagus, Stomach, Intestines, and abdominal Muscles: These are caused, first, By an acrid, putrid, and bilious Matter, received into the empty Stomach, thence ascending into the Fauces, which, together with the Stomach, it vellicates, and irritates. Hence the Parts above-mentioned are drawn into Consent, and excited to similar Motions: And that a Nausea is thus caused, we distinguish, by previous Fasting, by a putrid Breath, and Sordidness of the Mouth, and Fauces. Or, secondly, By a tenacious, viscid, fluctuating Matter, residing in, and vellicating the same Parts. This Species of Nausea is distinguished by the previous Signs of such a Viscidity. See LENTOR. Or, thirdly, by a slight Inflammation of the Stomach, Oesophagus, Intestines, and adjacent Viscera: This is distinguished by the proper Signs of such Inflammations.

Fourthly, By the Remembrance of something, which, formerly taken into the Stomach, excited such a Nausea.

Fifthly, By an inordinate Motion of the nervous Fluid, excited by any Cause whatever: This is distinguish'd by *Deliria*, *Spasms*, a *Vertigo*, and *Tremor*.

If a Nausea persists long, it produces Emptiness, Abstinence from proper Drinks and Medicines, Vomiting, and many Misfortunes which may hence be excited; the principal of which are, Weakness, an alkaline putrid Acrimony, and universal Dryness.

A Nausea, from the first Cause, is to be cured by the Use of acid, nitrous, aqueous Drinks, Aliment, and Medicines, which are the same as those recommended against febrile Thirst; by the Exhibition of a lenient Purge of the same Kind; by acido-austere Medicines, which corroborate the Fibres; or, if these do not succeed, by a Vomit.

The second Species is to be remov'd by diluting, attenuating, purging, and Emetics. The Medicines here proper are the same as those recommended in a febrile Anxiety.

The third Species is only to be removed by curing the Inflammations which excite it.

The fourth Species is cur'd by forgetting and avoiding the Ideas which cause it.

The fifth Species is remov'd by austere Remedies, Rest, Narcotics, and cold Water. Thus, for Instance,

Take of the Rob of Quinces, four Ounces; of the Syrup of Lemons, two Ounces; of *Matthioli*'s distill'd Aqua Vitæ, one Ounce; of distill'd Cinnamon-water, six Drams; of the distill'd Water of Citron-peels, six Ounces; and of the Tincture of Opium, sixty Drops: Mix all together, and exhibit one Ounce for a Dose, till the Nausea is remov'd.

P Y R

Take of strong distill'd Mint-water, a sufficient Quantity : And let the Patient drink an Ounce of it cold, every Quarter of an Hour.

Take of the Rob of Quinces, a sufficient Quantity : Of which let the Patient take one Dram every Half-hour.

Take of recent Lemon-juice, half an Ounce ; and of Rhenish-wine, one Ounce : Mix both sufficiently together ; add one Dram of the Salt of Wormwood ; and exhibit during the Effervescence.

Take thin Slices of Lemon, sprinkled with Sugar : To be kept lying on the Tongue.

Most Patients receive Relief from Epithems, Fomentations, Cerates, and stomachic Applications ; especially when there is no Inflammation. Thus,

Take of the aromatic Powder of Roses, of Diagalanga, and the Diarrhodon Abbatis, each one Ounce : Mix all together, sew up in a Piece of Muslin, and apply to the Epigastrium.

Take of the stomachic Cerate of *Galen*, a sufficient Quantity for making a stomachic Plaister, to be spread upon Leather. This Plaister affords Relief, so long as it adheres.

Take of *Matthioli*'s Aqua Vitæ, one Ounce ; of the Spirit of Angelica-roots, of the carminative Spirit of *Sylvius*, and of the Spirit of Mint, each two Ounces : Let a small Slice of toasted wheaten Bread, well soak'd in these, be applied warm to the Epigastrium, applying over it a Swine's Bladder moisten'd with Oil, and secur'd by a Bandage. This Dressing is to be renew'd every twelve Hours.

Hence we learn why, in acute Diseases attended with a *Nausea*, a Purge, or an Emetic, exhibited in the Beginning, are of such great Service ; and in what sort of acute Distempers : Why Patients, under acute Fevers, abhor pinguious Aliments, Flesh, Eggs, and Fish : And why, on the contrary, they covet Water, Acids, ripe Fruits, and cooling Liquors :

Why Medicines can be of no Service, unless the *Nausea* is first cur'd :

Why the Symptom of a *Nausea* is often incurable :

And why Diseases, attended with a *Nausea*, are generally, when they cease, succeeded by a sudden, unusual, and surprising Appetite.

FEBRILE ERUCTATIONS, AND FLATULENCES.

Eructations are caused by an elastic Matter, dilatable by Heat, Effervescence, or Fermentation ; which one Moment is confin'd, and the next set free, by a Relaxation of the Part which confines it, and is forcibly exploded, with a Noise.

Thus Air, opposite Salts, ripe Fruits, putrefying Humours, and fermenting Vegetables, afford Matter for Eructations and Flatulences ; the Force and Fetidness of which vary, according to their different Natures.

These, however, if suffer'd to pass off freely, are productive of no forcible Explosion : It is evident, therefore, that Spasms of the *Sphincter* of the *Oesophagus*, of the *Oesophagus* itself, of the superior and inferior Orifice of the Stomach, and of the Intestines, concur, and are alternately relax'd, in order to produce Eructations, Flatulences, Explosions of Wind from the Anus, and Murmurings of the Intestines from Wind confin'd.

If the two Causes above-mention'd, that is, a Production of Flatulences, and their Confinement by Spasms, concur, act strongly, and continue long, then the elastic Matter, dilated by Heat, Motion, and its own proper Force, and confin'd in a Cavity, the surrounding Fibres of which are spasmodically constricted, distends, stretches, and excites Pain in the Membranes which confine it, and compresses the adjacent Parts : Hence Pains, and intolerable Anxieties, are excited, which cease upon the Emission of the Flatulences. To this, if the Force of a Fever is added, it is evident, that insupportable Torments may be produced.

The Cure of these Disorders consists,

First, In removing the Matter which excites them, by diluting Remedies ; by warm, aqueous, and somewhat aromatic, dissipating Drinks ; by Remedies which render the effervescing Salts perfectly neutral ; such as correct Putrefaction, and put a Stop to Fermentation.

Secondly, In mitigating the Convulsions by proper Remedies ; among which are, those which destroy Acrimony, and compose the Spirits ; the principal of which are, Opium, and mild Antihysterics.

P Y R

Thirdly, In the Application of warm, relaxing, anodyne, and somewhat aromatic Clysters, Fomentations, and Epithems ; and of Cupping-glasses without Scarification, to the *Abdomen*.

Hence we understand what sorts of Meats, Drinks, Aliments, and Medicines, are flatulent ; why Flatulences happen particularly in the Stomach, and superior Intestines, when empty ; in the Intestines, when wounded ; when the Abdomen is, by any means, compressed ; and why they accompany hypochondriac, hysteric, convulsive Disorders, and the Colic.

FEBRILE VOMITING.

Vomiting is a violent Expulsion, first, of the Contents of the Stomach ; then of those of the Intestines ; and, lastly, of those of the Viscera, which evacuate themselves into the Intestines. The proximate Cause of Vomiting is, a convulsive Motion of the muscular Fibres of the *Fauces*, *Oesophagus*, Stomach, Intestines, Diaphragm, and abdominal Muscles ; the remote Cause, whatever is capable of stimulating the Fibres above-mention'd, or the easily-irritable Viscera, to spasmodic Contractions.

Vomiting is sometimes excited by a primary Disorder of the Stomach, upon the Access of a Fever ; as, if it is affected with Convulsions, Inflammation, Suppuration, or Scirrhus ; or if any Part of it is become cartilaginous ; in these Cases it is excessively obstinate, and may be distinguished by the Signs of the Distemper which produces it ; and when that is remov'd, it ceases spontaneously.

But, frequently, Vomiting is caused by similar Disorders in the Viscera, and circumjacent Parts, when they are irritated by the Stomach distended with Aliment, especially upon the Access of a Fever. In such Cases, it is extremely obstinate, and the Cause is sometimes not easily discovered.

Or a Vomiting may be excited by every Cause of a considerable *Nausea*, mentioned above, from the Doctrine of which this Species of Vomiting may be distinguish'd ; and hence, also, we may learn how to treat, and cure it.

If the Symptom of Vomiting continues long, it produces an Atrophy, the Iliac Passion, Convulsions, and all the Effects of a great and obstinate *Nausea*, mention'd above.

The Cure of that Species of Vomiting which is excited by primary Disorders of the Stomach, and those of the adjacent Parts, is to be learnt from the History of those particular Diseases.

That Species which is produced by the same Causes as a *Nausea*, is to be cur'd by the Remedies recommended for a *Nausea*, diligently applied ; especially Opiates, and corroborating, attracting, and dissipating Epithems.

Hence the Reason is evident, why Vomiting is so difficult to be check'd in many acute Diseases ; and hence we learn the Falsity and Danger of the Maxim, *that Vomiting is cur'd by Emetics*. This Doctrine of Vomiting farther teaches us, why Sudorifics sometimes remove Vomiting, as in the Plague ; why it often ceases, immediately after a Crisis, as in the Small-Pox ; why it is frequently cured by Bleeding, as in acute inflammatory Distempers ; why those who vomit perpetually in the Beginning of acute Distempers, without any Inflammation of the Stomach, or adjacent Parts, have a Crisis by way of Diarrhœa, which may be prevented by an Emetic exhibited in the Beginning of the Distemper ; and why a Discharge, by Vomit, of whatever is taken into the Stomach, as soon as receiv'd, is one of the worst Symptoms that can happen in acute Distempers.

An Hiccup may be excited by the same Causes as a Vomiting, and is to be cur'd by the same means.

Predictions from VOMITINGS ; and first of those of a salutary Kind.

Since it is certain, that the Humours may suffer a good or a bad Expurgation by way of *Vomiting*, the Events of Diseases may, therefore, in a great measure, be prognosticated from such Excretions ; from those which are bad, otherwise call'd *symptomatical*, we may predict either Death or a long Disease ; and from the good we may venture to foretel the Recovery of the Patient.

Vomiting in the Beginning of acute Distempers, is excited by an Irritation of the Stomach, through the excessive Quantity, or depraved Quality of the Food, or Humour contained in it ; or from an Exudation of a Humour, either from the circumjacent Parts, the Liver, for Instance, when under an Inflammation, or from the whole Body, and a Cacoehymy of the Blood and Juices ; but *Vomitings*, in the Increase and Progress of the Disorder, are produced by the Redundance or Malignity of the Humours stimulating the Stomach to Excretion. *Vomitings*, thus occasion'd, are by Physicians call'd *symptomatical*, and bad ; because they are seldom or never succeeded by a Recovery, or, at least, not till after a long time, much Pains, and frequent Relapses. It is usual, also, for the Patient, in the Height of the Disease, or a little before, when Signs of Concoction have preceded,

preceded, to be suddenly taken with Vomiting in a plentiful manner; and this Vomition they call *critical*, because it is the Work of Nature prevailing over the Disease, and employ'd in cleansing the Body; on which account it is most salutary, and indicates a safe and speedy Crisis and Solution of the Disease.

Of the Signs which indicate Vomiting, we have the following Account from Hippocrates in the *Prognostics*: If a Person, he says, not seized with a mortal Fever, tells us that his Head aches, or that a Mist appears before his Eyes, or that he has a gnawing Pain at the Mouth of his Stomach, bilious Vomiting is at hand. If he be, also, under a Rigor, with a Coldness of the Parts about the Hypochondria, the Vomiting may be expected still sooner; and if he eats or drinks at this Juncture, he will vomit immediately. And 1 *Epid. Sect. 2.* we are told, that they who were affected with burning, or other epidemic Fevers incident to that Constitution of the Seasons there described, and were oppressed with a Heaviness of the whole Head, attended with a Cardiognos, and a Nausea, had those Symptoms succeeded by a Vomiting of bilious and pituitous Matter. Galen, in his Book of *Crisis*, says, that the Signs of Vomiting are, a gnawing Pain at the Mouth of the Stomach, with a Pain of the Head, a Scotomy, an Agitation of the lower Lip, and a Flux of much thin Spittle from the Mouth; and these not attended with Signs of an Hæmorrhage; Sweat, Flux of the Belly, or an extraordinary Flux of Urine, the Menfes, or Hæmorrhoids. But the Author of the *Coac.* 142. gives us only three Signs of Vomiting; which are, a Nausea, Cardiognos, and Ptyalismus, or Flux of Spittle. In a Phrensy Galen affirms, that frequent Spitting alone foretells Vomiting.

These, then, are the Signs which indicate Vomiting; and so, without insisting more largely or accurately on this Head, we proceed to what we principally intend here, which is, to give the proper Marks and Characters by which we may distinguish those Vomitings which are good, useful, and salutary.

For lean or thin Bodies, which are prompt and easy to vomit, Expurgations by Vomitings, in the Summer Season, are useful and proper; as we are taught by Hippocrates, 4 *Aph.* 4. 6. especially in Disorders of the Parts seated above the Diaphragm, *ibid.* 18. where we read, that Pains above the Diaphragm indicate Purgation by Vomiting; Pains below that Part, Purgation by Stool.

As to Substances discharged by Vomiting, we read, in the *Prognostics*, that Vomiting is most serviceable when the Matter evacuated is mostly a Mixture of Bile and Phlegm, and not very thick, nor much in Quantity. Galen, *Com. in 4 Lib. Aph.* says it is good for bilious Vomitings to succeed a Rigor; because they indicate a Solution in a burning Fever, from an Expurgation of the Cause; whence not all Vomitings are good and serviceable, but only such as critically discharge a Multitude of bilious Humours. And not only bilious, but pituitous Vomitings, if critical, are beneficial; since Hippocrates, 6 *Epid. Sect. 1. Aph.* 5. commends pituitous, as well as æruginous Vomitings, in Pains of the Kidneys: And Galen, *Com. in 5 Aph.* 1. assures us, that æruginous Vomitings have proved salutary in Convulsions; and speaks of a young Man, who under violent Vomiting was convulsed in all Parts of his Body; but as soon as he had discharged an æruginous Matter, his Fever and Convulsions immediately ceased. Hippocrates, in his Book *de Prisca Medicina*, touches very elegantly upon the Benefit of this Expurgation of bilious Humours. "When a kind of Bitterness, he says, which we call yellow Bile, is effused, what Anxieties, burning Heats, and unruly Disorders, immediately arise! But when we become free from this Humour, and the same is discharged, either spontaneously, or by the Help of Medicines, provided it be done either way in Season, we find manifest Relief from our Pains and Heat." And a little after, "When Persons are molested with a sharp, acrid, and æruginous Bile, what furious Passions, what Gnawings of the Viscera and Thorax, with Desperation and Despondency of Mind, seize upon them! Nor are any of those Symptoms removed before the peccant Humour is purged off, subdued, and mixed with others."

Hence we conclude, that all Vomitings, which duly evacuate the Humours, which are the Causes of Diseases, are good: They are, also, as we before observed, called *critical*; the proper Marks or Qualifications of which are, that they appear when the Disease is in a State of Concoction, that is, when Signs of Concoction have preceded; that they happen on critical Days; that they be conformable to the Nature of the Disease; and, above all, that they entirely remove the Symptoms of the Disease; or, at least, alleviate and diminish them. And this agrees with what Hippocrates has determined, 1 *Aph.* 2. where we read, that "spontaneous Evacuations by Stool or Vomit, if the Matters discharged are such as require an Expurgation, are beneficial, and easily supported; if otherwise, the Effect is contrary." Of the Marks or Signs of

critical Excretions, we find the Author of the *Coac. Præn.* thus speaking, *T.* 77. "In a continual Fever, if the Patient lies speechless, with his Eyes shut, and now-and-then twinkling, if he be seized with an Hæmorrhage from the Nose, or with Vomiting, succeeded by a Return of his Speech and Senses, he recovers."

Those Vomitings, also, are salutary, which are attended with other good Evacuations: Of this Nature was the bilious Vomiting of the sick Woman in the *Strand*, who was three Months gone with Child, 1 *Epid. Sect. 3. Ægr.* 13. on the fourteenth Day of her Illness, and attended with a Sweat, succeeded by a perfect Crisis, and Removal of the Fever.

Vomitings without Signs of perfect Concoction, though they may be good, and alleviate the Disease, and diminish its Symptoms, yet they promise no Recovery till after a long time, and many Relapses. Such was the Vomiting of the Wife of Epicrates, 1 *Epid. Sect. 3. Ægr.* 5. who "on the fifteenth Day was seized with frequent Vomitings of bilious, yellow Matter; sweated, and was free from a Fever; but towards Night had a high Fever, and discharged a thick Urine, with a white Hypostasis." Here the Crisis and Recovery were delayed till the eightieth Day.

Vomitings of a pernicious Tendency, such as the black, pure, and others, if the Disease under which they happen be pretty favourable, portend not Death, but a long Disease, and Relapses. Thus of the Patient last mentioned it is said, that "about the twentieth Day, in the Morning, she had a small Return of a Rigor, lay under a Coma, slept quietly, and vomited bilious and black Matter, in small Quantities." Another Example we have in Cleonæstides, 1 *Epid. Sect. 3. Ægr.* 6. who, also, recovered not till the eightieth Day; and was observed by Hippocrates "on the twenty-fourth Day to be affected with a Pain in the Extremities of the Hands, and to vomit up a yellow, bilious Matter, at pretty frequent Returns, and, a little after, virulent Matter, by which all the Symptoms were alleviated." These Vomitings, as they indicated some sort of Concoction of the Urine, which, it is said, "was during all the time thin, but not colourless," since it was of a good Colour, (which, according to Galen, in his Comment on the Case of the Virgin of Abdera, 3 *Epid. Sect. 3. Ægr.* 7. is the greatest Sign of Recovery in those who labour under a Redundance of Humours) and alleviated the Disease, and its Symptoms, were justly to be accounted salutary, and procured a salutary, though imperfect Crisis, from which might be prognosticated a future Recovery, though at a good Distance of time.

We conclude, then, that all Vomitings in acute Distempers, which alleviate the Disease, and render it more supportable to the Patient, are salutary; but those which are not good in their own Nature, such as pure, æruginous, black, fetid, virulent, scanty, and particoloured Vomitings, if the Disease be of the milder sort, and not in an absolutely crude State, are Prognostics that the same will be long, if not mortal, and attended with much Pain and Trouble, and frequent Relapses.

A spontaneous Vomiting, succeeding upon a long Diarrhœa, is said by Hippocrates, 6 *Aph.* 15. to remove the Disorder; and bilious Vomitings, in a Woman of a bilious Constitution, whose Menfes flow'd in less Quantity than was requisite, are by the same Author, 1 *Epid.* pronounced good.

Of destructive Vomitings portending Death.

Vomitings of a bad Kind, portending a fatal Event, happen in the Beginning of the Disease, or soon after; and are attended with none, or, at least, very obscure Signs of Concoction; for, at such times, Nature, as has been observed, makes no due Excretions, according to that 2 *Epid. Sect. 1.* "Critical Symptoms determining for the better appear not presently." The Nature of destructive Vomitings, then, appears, in the first Place, from their happening in the Beginning of a Disease, and being attended with Signs of Crudities.

Secondly, Excessive Evacuations by Vomiting, which exhaust the Strength, indicate a depraved Excretion; and copious Discharges this way, under a violent Disorder, if they relieve not, in some measure, the Patient, portend his Death; and with the greater Certainty, if accompanied with other pernicious Signs; but most certainly and infallibly, when they are in their own Nature destructive; as when they are *porraceous, livid, æruginous, black, particoloured, virulent, fetid, pure or unmixed, and scanty*, or discharging small Quantities of Matter; of which we are to treat singly: These Kinds of Vomitings were observed by Hippocrates in the phrenetic Patient, 3 *Epid. Sect. 3. Ægr.* 4. the Woman who lay ill in *Foro Mendacium*, *ibid.* *Sect. 2. Ægr.* 12. and the Son of Hegetorides, 7 *Epid. sub T.* 61. a little before their Death.

Small and scanty Excretions by Vomiting in acute Diseases, are one of those Signs, which, as Galen says, *Com. 2. 1. 1. Prophet. T.* 47. are in the Whole to be regarded, as of bad

Signs.

Signification. For an Evacuation truly critical ought not to be in small Quantities, since a scanty Discharge, of what Kind soever, indicates either an intolerable Redundance of the morbid Matter, too copious to be suffered by the affected Parts, or the Imbecillity of Nature, which proposes to itself an Excretion of Superfluities, but is too weak to effect it. Hence it appears; that scanty Vomitings are of the Number of critical Signs which determine nothing, and always indicate a difficult and dangerous, and generally a mortal Crisis, or Turn of the Disease, especially if they are, besides, bad in their own Nature; and are so far from relieving the Patient, that they reduce him to a worse State than he was in before.

Pure, sincere, or unmixed Vomitings, in acute Diseases, are very bad; because the excreted Humour is not only crude, but indigestible, as excluding not only the Act, but the Power of Concoction. Hippocrates, Lib. Prognost. bestows the Epithet of ἀκαθάρτος [from a Negative, and καθαίρωμι, to mix] on whatever Humour is void of Mixture, or every crude and seruid Excretion which is not diluted with its proper Serum, but owes its Generation to the Disorder of some Part, or to the Fervor of the febrile Heat, by which the aqueous and serous Part is consumed. This Kind of Excretion, therefore, by Vomiting in acute Fevers, indicates a violent internal Heat, and such as generally proves too strong for Nature. If it be attended with other bad Signs, it is of fatal Prognostication: Hence the Author of 1 *Prorrh.* says, that "Pure and unmixed Vomitings, attended with much Nauseating and Anxiety, are bad." And Hippocrates, *Prognostic.* tells us, that "The purer or more unmixed Vomitings are of the worst Sort."

The same Author, in the Treatise just mentioned, passes his Judgment on bad Vomitings, with respect to their Colours, where he says, "If the Matter discharged by Vomiting be porraceous, or livid, or black, any of these Colours is to be esteemed bad; but if the Excretions be of all these Colours, it is a most fatal Prognostic; but if the Matter be of a livid Colour, and, also, fetid, it shews Death to be very near." All these Colours in Excretions by Vomiting are very bad; but porraceous, æruginous, livid, black, and fetid Substances may sometimes be vomited critically, though never but in a concocted State of the Disease, that is, at its Height or Decline; and then they will be sure to effect an entire Solution of the Fever, or at least an Alleviation of it and its Symptoms. However it seldom happens, that Substances are critically excreted of these Colours; and therefore, in a violent continual Fever, where no Signs of Concoction have as yet appeared, they are to be esteemed most certain Signs of Death.

Vomitings of different Colours are, in their own Nature, very bad, because, as Galen says, they indicate a Variety of Disorders affecting the internal Parts: Whence the Author of 1 *Prorrh.* T. 60. tells us, that "Vomitings of various Colours are bad; and especially if they are discharged at short Intervals," that is, as Galen says, follow fast one upon another.

Virulent, also, or æruginous Vomitings are, for the same Reason, mortal in acute Diseases, and most of all in a Pueris, because they indicate the Brain to labour under a deadly Inflammation from an adust Bile. To this Purpose is the Observation of Hippocrates, 1 *Epid. Sect. 2.* where we read, that the epidemic Phrenies ended in Convulsions, and æruginous Vomitings, under which some of the Patients died suddenly. And of the phrenetic Patient, 3 *Epid.* that "On the first Day of the Decubitus, he vomited much thin virulent Matter, and had a Fever, attended with an Horror." For æruginous, which we suppose we may, also, call virulent Vomitings, to happen after bad and destructive Signs, portend Death unavoidable; for mortal Signs, succeeding one upon another, shew the Case to be desperate. These kinds of Vomitings, attended with Pains of the Head, Watchings, or Deliriums, which are Signs of an Inflammation of the Head, indicate an approaching Mania, 1 *Prorrh.* 10. From the Premises we infer, that æruginous or virulent Vomitings indicate, in the first place, the near Approach of a destructive Disorder, as Delirium, Madness, and Mania, or Melancholy, attended with a Ferocity, and, at last, Death with Convulsions; since, as we have elsewhere declared, it is the Nature of these Kinds of Deliria, on account of an extraordinary Dryness, occasioned by an intense Degree of Heat, to end, at last, in Tremblings and Convulsions.

Fetid Vomitings seem to indicate no less Danger, but are rather most certain Prognostics of Death, as being, in their own Nature, extremely bad and destructive, according to the *Prognostic.* where it is said, "That Vomitings of a livid Colour, if they have, also, a fetid Smell, portend very speedy Death; and all subputrid and fetid Smells in Vomitings are bad." The Woman who lay ill in *Foro Mendacium*, 3 *Epid.* before her Death, vomited black and fetid Matters.

All bilious; that is to say, yellow, croceous, portaceous; and all Vomitings accompanied or preceded by bad Signs, are pernicious; and if reducing the Sick to a worse State than before, destructive: Those of the former kind are to be esteemed among those Pseudo-critical Signs, which determine nothing; but indicate a doubtful future Crisis; and, in the last Case, they appear to portend nothing but Death; and with the more Certainty; if they happen to be malignant. To this Purpose is that in 1 *Prorrh.* 62. before-quoted, "Pure or unmixed Vomitings with Anxieties are bad." And, *ibid.* 72. "They who vomit up black Matters, and are affected with a Nausea, accompany'd with a Delirium, and a slight Pain in the Pubes; who have a fierce Look, and shut their Eyes, ought not to be purged, because Purging would prove destructive to them." And a little after, T. 79. we are told, that "Scanty and bilious Vomitings are bad; and especially when attended with Watchings: Blood falling by Drops from the Nose, in this Case, is, also, bad." Of this Nature were the Vomitings observed by Hippocrates, in the sick Woman in *Foro Mendacium*, 3 *Epid. Sect. 2. Agr.* 12. "Who, he says, on the twelfth Day vomited much black fetid Matter, and was much affected with the Hiccough, and a troublesome Thirst: On the thirteenth she brought up great Quantities of black virulent Matter, had a Fit of a Rigor, and about Noon was speechless."

All Vomitings which give no manner of Relief to the Patient, are bad; but those which render his State worse, are very pernicious, though they happen not to be malignant: Thus they proved in the Case of the Woman before-quoted, of whom we read, that "On the eighth Day, about Noon, she recovered Heat, was thirsty, under a Coma, with a Nausea, and vomited small Quantities of a bilious yellowish Substance; at Night was very ill, took no Rest, and made great Plenty of Water, which flowed from her imperceptibly." This Woman, if her bilious Vomitings had been good, should have rested, and found herself better; and thus it ought to have been, also, after the Vomitings on the ninth Day; whereas, on the tenth, the Fever was exasperated: And on the eleventh Day, after some bilious and virulent Vomitings, she was taken with a Rigor, her extreme Parts were cold, and she fell afterwards into a cold Sweat; and though she had vomited plentifully that Day, yet she had a very troublesome Night. All these Vomitings were of deadly Signification, as appearing not only in a violent Disorder, but attended with other bad Signs, and producing a Mutation in the State of the Patient for the worse; which last is the proper Character of all useless and remarkably bad Signs.

In Wounds of the Head, also, bilious Vomitings are bad; according to Hippocrates, 6 *Aph.* 50. "A Cut received by the Brain is necessarily succeeded by a Fever, and Vomiting of Bile."

Vomitings in the Iliac Passion are, also, very pernicious, as appears from 7 *Aph.* 10. where we read, that "Vomitings, the Hiccough, a Delirium, or Convulsions, succeeding the Ileos, are bad." Here Galen, in his Comment, says, "That in the Ileos nothing descends to the lower Parts; and that this is an inseparable Property of that Disorder. But Vomiting is not always a Symptom; but when the Disease is mortal, and the Patient violently racked, the Excrements ascend, and a Hiccough succeeds." And Lib. 6. de Loc. affect. he says, that "He never knew one who vomited up his Excrements ever recover."

These, then, are the Vomitings which are justly to be dreaded in acute Diseases, the immoderate, scanty, yellow, red, porraceous, æruginous, livid, black, fetid, pure, particoloured, which happen in the Beginning of Diseases, where no Sign of Concoction have preceded. In such a Circumstance they are generally mortal; and if the Disorder be violent; and if other bad Signs appear together with them; or precede, or follow them, they are to be regarded as certain Prognostics of Death; especially when, as we observed, they in no manner relieve the Patient, but rather alter his Case for the worse. *Proffer Alpinus, de Præfag. Vit. & Mort. Agror.*

FEBRILE DEBILITY.

Great Debility arises from an Impediment to the Influx of the nervous Fluid into, and its Pressure upon, the Muscles.

This Impediment may be, an Emptiness of the Canals, when the Fluid they should convey is exhausted; or an Immeasurability of the Fluid; or an Obstruction, or Compression of the Canals, especially near their Origins in the Cerebrum, or Cerebellum; or a Weakness of the Heart, thus rendered incapable of furnishing the Brain with a Quantity of Blood, sufficient for the due Secretion of the nervous Fluid.

That the Impediment to the Influx of the nervous Fluid into, and its Pressure upon, the Muscles, and the consequent

Weakness, arise from the Emptiness of the Vessels, is known from the preceding or present Symptoms of large Evacuations, and from the long Duration of the Disease they accompany or succeed; from morbose or artificial Hæmorrhages; Sweats; a Diabetes; Salivation; or Diarrhœa; from a Defect of Aliment, with Respect to its being taken in, its Retention, Digestion, and Conveyance to the Blood; from Paleness, a Smallness of the Pulse, collapsed Vessels, and flaccid Muscles.

That they arise from an Immeability of the Fluid, may be distinguished from what has been said under the Article LENTOR.

That they are caused by Obstructions, may be known from the Doctrine of Obstructions, given under the Article OBSTRUCTION.

We distinguish, that a Compression of the Cerebrum and Cerebellum is the Cause of Debility, when we perceive those Functions injured, which depend upon the Integrity of these Organs; as in case of Deliria, profound Sleep, Tremor, Vertigo, and Ringings in the Ears.

That Debility arises from a Weakness of the Heart, is known by the Signs of a languid and deficient Circulation. See PLETHORA.

Liquid Aliments, nearly approaching the Nature of the Blood, which are previously digested by Art, gelatinous, and mild, and artfully impregnated with vinous and aromatic Substances, if exhibited frequently, and in small Quantities at a time, serve excellently to fill the exhausted Vessels, gentle Frictions of the Extremities being used at the same time; particularly if these are prepared of proper Materials, opposite to the Nature of the Disease.

Among these Aliments are the Broths made of Beef, Veal, Mutton, and Fowls of the gallinaceous Kind, either separate, or mixed together, with the Addition of Salt, and Lemon-juice; new Milk; and the Decoctions of Bread, mentioned under the Article FIBRA.

That Species of Debility arising from an Immeability of the Fluid, is to be cured by the Methods recommended under the Articles LENTOR, and OBSTRUCTION.

That caused by an Obstruction of the Canals, is to be relieved by the Methods considered under the Article OBSTRUCTION.

That Species which arises from a Compression of the Cerebrum, and Cerebellum, is generally cured by such Applications near the Part affected, as are capable of removing the impacted obstructing Matter, and of deriving the Force thereof to other remote Parts. The Nostrils, therefore, Head, Face, Mouth, and Neck, are to be moistened with mild Fomentations; and Epispastics are to be applied to the Feet.

The debilitated Heart usually recovers Strength very slowly: But the general Methods of removing Debility, recommended above, may do some Service.

From what has been said, we may learn, how little the Use of Cardiacs in acute Diseases is understood: And that Debility, in Fevers, is frequently an insuperable Symptom.

FEBRILE HEAT.

External Heat may be determined by a Thermometer; internal, by the Sensation of the Patient, and Redness of the Urine.

A greater Quantity of Fire is always present in that Part which is most hot.

This increased Quantity of Fire arises from a more violent Attrition of the fluid Parts of the Body on each other, and on the Vessels, and of the Vessels reciprocally on these.

This violent Attrition is caused by a strong Motion of the Fluids from the Heart, and a great Resistance of the Vessels to the Force of the Heart.

This Motion is to be estimated, by the Density of the Blood impelled from the Heart, and its Velocity through the Vessels.

The Density of the Blood is known by examining the Blood taken out of the Vessels; by a preceding Dissipation of the most fluid Parts; and by an Hardness of the Pulse.

The Velocity may be calculated from the Number of Pulsations of the Heart, compared with the Magnitude of these Pulsations.

The great Resistance is to be known by the Bulk of the inert Fluids to be moved; and from the Paucity, Narrowness, and Immobility of the Canals, which transmit them.

The Bulk of the Fluids is perceived by the Signs of a Plethora, or Cacochymia; or by a sudden Solution of those Liquids, which before were in a State of Stagnation, as of the Fat; but principally by an Inflation of the Veins, together with a quick and strong Motion of the Arteries.

The Paucity of Vessels is to be learned from the History of Obstructions, or of Wounds. See OBSTRUCTION, and VULNUS.

The Narrowness of the Vessels is known by the Sight, the Touch, a dry Temperament, and a great Increase of Heat, upon a very small Degree of Motion.

The Immobility of the Canals which resists their Dilatation, is learned from all the Signs of a Rigidity of the Fibres, Vessels, and Viscera. See FIBRA.

Upon so many Causes depends the Origin of Febrile Heat; which, however, may have a great Variety of other remote Causes.

But Heat may be increased, by an Increase of one of these Causes only; and, in this Case, the Increase of Heat is in proportion to the Cause.

But if two of the Causes are, at the same time, increased, the Heat is as the Product of the Increases of the Causes multiplied by each other.

And this Method of calculating will hold, with respect to the Accumulation of more Causes.

An increased Heat dissipates the most liquid Parts of the Blood, that is, the Water, Spirit, Salts, and most subtile Oils; dries and condenses the Rest of the Mass, and causes it to concrete into an immoveable, irresoluble Substance; disengages, attenuates, renders acrid, exhales, and moves the Salts and Oils: Hence the smallest Vessels are fretted and broken; the Fibres are rendered dry, rigid, and contracted; and hence many acute, dangerous, and fatal Diseases are produced, which may be accounted for from what has been said relative to Heat.

From this Doctrine we learn, what is required to mitigate Heat; and how various the Remedies are which tend thereto.

Thus, if an increased Velocity of the Blood excites Heat, the Remedy is, whatever diminishes that Velocity: The principal of these are, Rest of the Muscles, and of the Mind; Venesection; a slight Compression of the Veins in the Limbs, continued a very short time, by Ligatures; a gradual and cautious Application of cold Substances, both externally and internally; and Preparations of the Poppy prudently exhibited.

If Heat arises from the Density of the Fluids, it is cured by those Remedies mentioned above, which diminish the Velocity; and by drinking Water, and Oxymel, and such Medicines as relax the Vessels.

The Bulk of the Fluids, in a Plethora, is easily diminished; but in a Cacochymia, the Diminution is to be brought about by evacuating slowly, and at Intervals: But when the Fat, which was before stagnant, is resolved, the greatest Difficulty arises; in this Case, aqueous Fluids, impregnated with an Acid, Honey, the Yolks of Eggs, or Sugar, together with perpetually continued Evacuants, are of the utmost Importance, because they render the Fat, or Oil, miscible with the Blood.

The Cure of Heat excited by Obstruction, may be learned from the Article OBSTRUCTION; and that Part of the Article VULNUS, which treats of the Accidents supervening upon Wounds, attended with Loss of Substance.

If Heat depends upon the Narrowness of the Vessels, they are to be dilated by relaxing Remedies. See FIBRA.

And Heat arising from a Rigidity of the Vessels, is removed by the same relaxing Remedies. See FIBRA.

When Heat is excited by many of these Causes combined, it must be removed by the proper Remedies above described, combined, also, together.

From all this Doctrine of Heat we learn, why a Fever, attended with excessive Heat, is acute, quick in its Progress, putrid, and, if there is the greatest Degree of Heat, pestilential: Why the Heat of a Bed, of Air confined, of Regimen and Medicines, must necessarily be, in such Cases, extremely prejudicial; and why Heat about the Heart and Hypochondria is of fatal Presage.

From this Doctrine, also, the Origin, Nature, and Effects of Dryness may be understood; and the Cure may hence be learned, which consists in the Exhibition of Drinks, Fomentations, Baths, Clysters, and Gargarisms, which are aqueous, somewhat acid, impregnated with Honey, and relaxing. *Boerhaave.*

PROGNOSTICS IN ACUTE DISEASES FROM HEAT.

Since Heat, Coldness, Dryness, Humidity, Softness, Asperity, and Pains, have relation to the Sense of Feeling, and furnish us with Signs and Symptoms for Prediction, as good and firm as any taken from other Heads, we think ourselves obliged to treat of them distinctly, with regard to our Subject of *Prognostication*. And here, first, we shall begin with Heat, from whence, the Observation of other Signs not being neglected, may be drawn Presages of Life and Death.

Heat, then, it must be observed, with relation to Prognostics, is either mild, or tepid, or high and vehement. A mild and gentle Heat is always good, especially if, according to *Hippocrates*, in his Book of *Prognostics*, it be attended with an equal Softness of the whole Body, or be like the Heat of the

the same Person when in Health. The Flesh of some Persons in Health is observed to be cool; of others temperately hot; of others again, hot to a pretty high Degree: Whence, if the Heat of the Sick be much the same as usual in a State of Health, it is a good Sign: And hence it is, that sometimes an high and vehement Heat, and sometimes a moderate Degree of the same, or Coolness, are laudable in the Patient, on account of their Approach to the Degree of Heat familiar to the Body whilst in Health: And the like Judgment is to be formed of the Urine, and other Excretions, which, if resembling those usually discharged in time of Health, are esteemed good. It is best, therefore, when the Body, under a Disease, suffers little or no Alteration with respect to Heat.

Of febrile Heat, the best Kind is what is mild, temperate, equal in all Parts of the Body, and united with a sort of Humidity, in which it chiefly resembles the natural Heat, which, as *Galen*, in 2. de Natur. Hum. tells us, is not only temperately hot, but, also, humid, in Opposition to acute and igneous, which kind of Heat is most contrary to the natural. This temperate Degree of Heat, therefore, will always be best, unless it happens, that we are deceived by the Malignity of the Disease: For there are several malignant Distempers, attended with a mild and gentle Heat, extremely like the natural; the Heat, in reality, being confined to the inward Parts, and not freely diffused abroad; for which Reason this good Heat must be accompanied with an equal Softness of the whole Body, as required by *Hippocrates*, in his *Prognostics*: "It is best, he there says, for the whole Body to be equally hot and soft;" for an equal Softness distinguishes a good Heat from bad ones, since the Heat of a Patient may seem to be temperate and equal, and yet proceed from a very malignant Disorder. In such a Circumstance the State of the Sick is known, and distinguished by an unequal Softness of the Body; where, in particular, the Hypochondria are commonly observed to be hard, and the Heat is by no means equally diffused over the whole Body; the extreme Parts, for Example, being less hot than the Belly, whose Region and Contents are under a more intense Degree of Heat. We conclude, therefore, that a temperate Heat, equally diffused over the Body, and united with an equal Softness, will always be a good Sign, since it is impossible for a Body, under such an equal Heat and Softness, to be fatally sick; the Union of these Properties being a sure Indication, that the Viscera are free from a Phlegmon, Obstructions, and any considerable Degree of Putridness.

An equal Softness of the whole Body distinguishes, also, a good from an hectic Heat, which latter being sometimes observed mild and gentle to the Touch, has given Occasion to mistake the Case of an hectic Patient: But an hectic Heat is not usually attended with a Softness, but rather with a Squalidness; and an Hectic Fever is not only known by this Mark, but, also, by an Inequality of the Heat itself: For the Fever, as *Galen*, on the *Prognostics*, observes, is exasperated after taking Food.

The best Heat, therefore, is what is temperate, equally diffused over the whole Body, and united with an equal Softness of the Flesh. And not only an Heat thus qualified, but even an intense and vehement Heat, diffused over all Parts of the Body in burning Fevers, is not to be condemned, since it is a Property of malignant burning Fevers, as *Galen* on the *Proorrhethica* observes, not to heat the outer Parts; as it is, on the contrary, of those which are not malignant, to put the whole Body in an equal Degree of burning Heat, even to the outermost Parts, by which they indicate, as *Galen* tells us, on the *Aphorisms*, the Viscera to be free from any violent Inflammation.

It is, also, often best, and most desirable, for presaging a Recovery in acute Disorders, for some Parts of the Body to grow hot, or kindle into an extraordinary Degree of Heat, especially the Parts towards the Skin, upon which Nature often discharges and deposits both the Vehemence of the Heat, and the peccant Humours. For the extreme Parts, in such Cases, to undergo an extraordinary Degree of Heat, is a very hopeful Sign; as the contrary is of bad Prognostication: Hence a Coldness of the extreme Parts in acute Diseases is a very bad Symptom, as, on the other hand, an Heat in the same Parts is a good Sign, as indicating the internal Viscera to be free from any great Phlegmon, Inflammation, or considerable Putrefaction of Humours; and that Nature is not oppressed with a Multitude of Crudities. It, also, signifies, that the febrile Heat has left the Viscera, and discharges itself upon the remote Parts; or, that the noxious Humours are propelled and deposited upon the same; for an extraordinary Heat extending itself to the Feet, is, in many Cases, a Sign of the Decline of the Disease: Whence we are directed by *Hippocrates*, de R. V. I. A. in the Decline of a Fever, when the Heat descends to the Feet, to offer the Patient Food.

An Heat of the extreme Parts, attended with a Redness and Inflammation, is, also, a good Prognostic. In Confirma-

tion hereof we are told by *Hippocrates*, in his *Prognostics*, that "The Patients [under a Quinsy] are very much relieved, if the Neck and Breast contract a Redness, and the Erysipelas returns not upon the inward Parts." And a little after he says, "It is safest when the Tumor and Redness are for the most part turned outwards."

Having made these Observations concerning good and salutary Heats, we are to take some Notice of the contrary to these, or the bad and pernicious; of which Nature is, first, an Heat of the Body, attended with a Colliquation and Tabes; such is the Heat of Hectics, which, unless corrected before it has colliquated the solid Parts, infallibly brings the Patient to the Grave. This kind of Heat is equal and uniform, acute, and not very obvious to the Touch and Senses; on which account an hectic Fever, in the Beginning, escapes the Knowledge of many Practitioners. *Galen*, as we have observed in another Place, in his Comment on the *Prognostics*, has taught us to know this Heat by the following Signs: "By an Hectic Fever the solid Parts of the Body become ignited; for which Reason the Fever remains constant to itself, without Alteration, under an Heat weakly affecting the Touch, after the manner of Lime-stone. As often, therefore, as the Patient eats or drinks, it is much the same as if you poured Water on Quick-lime; whence the Heat becomes much more sensible to the Touch."

That uniform Heat, also, of the whole Body under a continual Fever, though amounting to no more than a tepid Warmth, or perhaps Coolness, is to be suspected, as indicating the whole Force of the Burning to be contained within the Viscera. *Galen*, in his second Comment on *Hippocrates*, de R. V. I. A. and on the Book of the *Prognostics*, tells us, that "For the Body, under acute Diseases, not to be hot in proportion to the Nature of the Fever, and to lie with the Limbs naked, though cold or tepid, as if they were in a burning Heat, is a Sign of Malignity." Such a tepid Heat, though never good, is, however, no sure Prognostic alone, no more than a vehement Heat, which, though always bad in itself, will yet afford no certain Grounds for predicting a fatal Event; since, on the contrary, for the Body to grow hot to an intense Degree, after a Rigor, is a Sign to us of the near Approach of a Crisis; and therefore that Measure of Certainty which it may carry with it, must be taken from other Signs.

A vehement Heat, either of the whole Body, or only of the Thorax and Belly, if it continue long, is pernicious, since it exhausts the Strength, dries and colliquates, and, if succeeded by Spasms, portends Death; for Convulsions from such a Cause as produces a Dryness of the Nerves, are all mortal. Hence *Hippocrates*, 7 Aph. 13. pronounces Convulsions, or a Tetanus, after violent burning Heats, a bad Sign.

A violent Degree of Heat, also, in the Face, or in the Hypochondria, or in the Thorax, is very bad; since the two latter indicate a Phlegmon of some one of the Viscera; and the first an Inflammation of the Brain; though it must be confessed, that a fiery Redness of the Face is not always a Sign that the Brain is thus affected, but, on the contrary, is sometimes the Forerunner of a critical Hemorrhage; but when it appears accompanied with some other pernicious Sign, it forebuds a bad Event. Hence we read, 1 *Proorrheth.* 49. "That a good Colour in the Face, with a very stern and sour Aspect, is a bad Sign." For, as *Galen* says, when the Face is of a florid Colour, and the Countenance remarkably sour and sad, it indicates the Brain to labour under some very hot Affection, by which the Blood is rendered adust. A very high and fiery Redness of the Face, attended with Sweating, is, by the same Author, pronounced a Sign of Malignity, and a just Ground for predicting a fatal Event to the Disease, since it indicates a great Inflammation of the Brain, which is reckon'd among mortal Distempers, as the Sweat, also, which in no measure relieves the Patient, is one of the pernicious Signs. The same is confirmed, and in a manner repeated, 1 *Proorrheth.* 67. where it is said, that "Burning Rigors are, in some measure, pernicious, and a fiery Redness of the Face, with Sweating, in such Cases is bad."

An Estuation, or intense Heat in the Belly, or Thorax, is always bad, for it often indicates some great and deadly Disorder in those Parts; as when it proceeds from a great and malignant Phlegmon of one of the Viscera. In this Case the extreme Parts are either tepid or cold; agreeably to what we read 1 *Proorrheth.* 7. where it is said, that "Those burning Heats which remain in the Hypochondria, after a general Refrigeration, are bad at all times, but especially when attended with Sweats." And more expressly to the Purpose, in 4 Aph. 48. "In Fevers not intermittent, if the outward Parts are cold, whilst the inward burn with Heat and labour under a Thrill, the Case is mortal."

In Fevers, a vehement burning Heat about the Stomach, with a CARDIOMOS [i.e. that Word], is bad, 4 Aph. 64. And

And burning Heats in the Sides, attended with Pain, and a Rigor, are condemned by the Author of 1 *Prorrh.* 66. "For a burning Heat in the Side, attended with a Pain, says *Galen* on the Place, is a Sign of a Phlegmon infesting that Part; and if a Rigor supervenes, expect a Suppuration of the Phlegmon." Now a Suppuration of a Phlegmon of the Viscera is seldom cured; but, when the Strength is much exhausted beforehand, never at all.

For the Patient, after some preceding Evacuation, to be so far from being relieved from his Fever, that he perceives an Increase of Heat, it is bad, according to 1 *Prorrh.* 66. where we are told, "That a Return of the febrile Heat, after Refrigeration from Sweats, is bad; and burning Heats in the Sides, with Pain, and a supervening Rigor, are bad." "For, as *Galen* says in his Comment, if any Person under a Disease, after Sweating, grows colder than Nature requires; and afterwards becomes feverish again, his Case is not free from Danger." Again, the Author of 1 *Prorrh.* T. 68. says, "That a Return of the febrile Heat, after Watchings and Sweating is bad." And the same is repeated *Coac.* 41.

We may add, with relation to this Subject, that for re-ri-gerated Bodies to be almost totally incapacitated for recovering Health, is highly pernicious in acute Diseases, as it is occasioned by an Extinction, Resolution, or Suffocation of the natural Heat. And the Case seems to be no less mortal, if the Symptom be observed of the exterior and outermost Parts of the Body, or if these are hardly capable of recovering Heat. To this Purpose we read, 1 *Epid. Sect. 1. Stat. 1.* that in a very mortal epidemic Fever, the Patients were much affected with Re-ri-gerations of the extreme Parts, and that it was scarce possible to recal the Heat into them.

For Bodies, also, in the last Place, to be soon heated, and soon cooled, is a bad Sign; for it shews, as *Galen* says, the Disease to be highly malignant, and if not mortal, yet of long Continuance: But in acute Diseases, which speedily exhaust the Strength, the same Symptom portends Death. *Prosper Alpinus, de Præfag. Vit. & Mort.*

PROGNOSTICS IN ACUTE DISEASES FROM HUMIDITY AND DRYNESS.

We sometimes form Presages in acute Distempers, from the Humidity or Dryness of the whole Body, or of some of its Parts. In those who die of an Empyema, or a Phthisis, may often be observed a little before their Decease, a copious Humidity, sometimes diffusing itself over the whole Body, sometimes no farther than the Legs and Belly. And *Hippocrates, Lib. Prognost.* pronounces a Dropsy in or from acute Diseases, mortal, as proceeding from an utter Decay of the natural Heat. "Dropsies, he there says, caused by an acute Disease, are bad; for they remove not the Fever, but increase the Pain and Sickness, and end in Death."

Difications, Dryness, and Hardness, either of the whole Body, or of any of its Parts, give, also, frequent Occasions for prognosticating an unhappy Event in acute Disorders. A Dryness and Extenuation of the whole Body, after a long Burning Fever, are just Grounds for presaging an hectic Habit of Body, terminating at last in Death, as every one versed in Medicine knows. An extraordinary Dryness, also, of the Forehead, Tongue, and other Parts, pretty often portend a fatal Event, as it did, for Instance, in the Case of the young Man of *Melibara*, 3 *Epid. Sect. 3. Aëgr.* 16. who, before his Death, was observed by *Hippocrates*, to have the Skin of his Forehead extremely dry and tense. *Prosper Alpinus, de Præfag. Vit. & Mort.*

FEBRILE DELIRIUM.

A Delirium is a Production of Ideas not corresponding to external Causes, but excited by the internal Disposition of the Brain, whilst the Judgment is conformable to such Ideas, and the Affections of the Mind, and Motions of the Body, correspond therewith: And these, either alone, or combined, form various Species of Deliria.

It always, therefore, witnesses a morbose Affection of the medullary Part of the Brain, which may arise from any kind of Obstruction; from an Impediment to the Influx, Transflux, or Efflux of the Fluids, through the Brain; from a violent Velocity, or Stagnation, of the Liquids, and many other Causes, which must be investigated with the utmost Diligence, in order to acquire a just Knowledge of the Method of Cure.

For various Remedies, and Methods of Cure, must be adapted to the various Causes; among which the principal are, Baths for the Feet; Epispasies apply'd to the Feet and Legs, and Frictions of these Parts; diluting Clysters frequently administered; a thin Diet; sedative, deobstruent, and diluting Portions; emollient Applications to the Head; gentle Anodynes; Bleeding in the Feet; and exciting the hæmorrhoidal, or menstrual Flux.

For an Account of Prognostics from a *Delirium*, see the Article DELIRIUM.

A FEBRILE COMA.

A *Coma* is a perpetual Inclination to sleep in a Fever, either with, or without Sleep; and always witnesses such a State of the Brain, as prevents the Exercise of the Senses, and animal Motions. It may arise from a Deficiency of the Arterial Fluid convey'd to the Brain; from an Impediment to its Circulation through the Brain; from an Impediment to the Secretion of the nervous Fluid from the Blood; or from whatever prevents the Flux and Reflux of the Spirits through the Nerves.

Hence various, and those often different, and even contrary Causes, may produce this Symptom, in a Fever; as all violent Evacuations, or Repletions; all glutinous, pinguious, or inflammatory Inspissations of the Blood; all Causes, of what kind soever, which may excite a Compression of the Brain, which may, also, have the same Effect, if they act upon the Nerves.

Hence appears the Necessity a Physician is under of investigating the particular Cause of a *Coma*, before he can determine what Remedies are to be apply'd, and in what manner: For, frequently, quite contrary Methods are required; and it often happens, that a *Coma* obstinate to all Remedies, ceases spontaneously, when the Concoction of the Fever is completed.

Those Remedies, however, recommended above in a *Delirium*, are proper in this Case; especially Fomentations apply'd to the Head and Neck.

But if there are Signs of a great Inflammation, it must be treated as an original Disease. See PHRENITIS, and SOMNUS.

A FEBRILE PERVIGILIUM, OR OBSTINATE WATCHING.

A *Pervigilium*, or obdinate Want of Sleep, is the direct contrary to a *Coma*; whence its Nature may be understood: It is caused by the first Tendency to a slight Inflammation of the Brain; an Increase of which often excites a *Coma*.

It is cured by Rest of the Muscles; Calmness of Mind; the Absence of all Objects of Sense; moderate Cold; a moist Air; mild and emollient Aliments; a gentle, continual, grateful, agreeably ringing hushing Murmur; farinaceous, suboleous, moistening, and demulcent Medicines; the Smell of soporiferous Vegetables; and the prudent Use of Anodynes, Paregorics, soporiferous Remedies, and Narcotics; always premising those Remedies, which are capable of checking and curing the Inflammation.

OF PROGNOSTICS IN DISEASES FROM WATCHING.

Watching, as well as Sleep, with respect to what they may portend, are to be considered first in their natural State; for when no Change or Alteration can be perceived on this Head, we have good Room and Opportunity for Prediction; since, if the Patient sleeps and wakes, according to Custom in time of Health, it is a good Sign, and gives Occasion to presage an happy Event. For it seems impossible for a Person to die of any Distemper, while his Times of Sleep and Watching remain entire, and without any manner of Alteration. On this Subject, *Hippocrates*, in his *Prognostics*, thus pronounces: "As to Sleep, it is best when conformable to natural Custom, or when the Patient wakes by Day, and sleeps by Night; but if there be any Alteration in this respect, it is so much the worse." And 2 *Aph.* 2. he says, that "when Sleep comes a *Delirium*, it is a good Sign."

As to *Watching*, of which we will now treat in particular, it is defin'd by *Galen*, "An Extension of the Soul from its Original to all Parts of the Body, which sometimes happens to be great and copious, at other times little and inconsiderable; because the Soul is extended from its Original sometimes for a long time together, and in an abundant manner; at other times, for a shorter while, and more sparingly." Hence then proceed much and little Watching; But what we treat of at present is, a great and preternatural Extension and Effusion of the Soul from its Original to all Parts of the Body, proceeding from a Dryness of the Brain, occasioned by hot and acrid Juices, or Exhalations; as we are taught by *Galen* in many Places, particularly *Lib. 3. de Loc. Affect.* and *Com. 4. in Lib. de R. P. I. A.* And *Com. in Prognost.* and *Lib. 4. de Præfag. ex Puls. Cap. 4.* and *Lib. 3. de Loc. Affect.* and in other Places, he tells us, that Watching is the proper Effect of Dryness, as Sleep is of Humidity; and that, as it is a Property of Heat to produce Deliriousness, so it is of Dryness to be the Cause of Watching: Whence they who have their Brains affected at the same time with an Excess of Heat and Dryness, are at once both wakeful and delirious, as the same Author observes, *Lib. 4. de Præfag. ex Puls. Cap. 8.* And in his *Comment* on 3 *Aph.* 31. he says, that old Persons are wakeful from Dryness.

From the Causes of *Watchings*, we shall now consider what may be learnt for prognosticating their Event; and here, first, we shall speak of *Watchings*, from which we may draw favourable Prognostics: For though all *Watchings* are in themselves bad, yet there are some which have a very good Signification; and such are those which precede good Crises, and are accompanied with Restlessness, Anxiety, Delirium, Convulsions, Pains, and other Symptoms, as *Galen, Lib. 3. de Crisibus*, observes. These *Watchings* are perceivable in the Increase or Height of the Disease, at which time it is usual for the Patients to be almost perpetually waking, to be under great Disorder, and to have the Fever more and more exasperated, the nearer they approach to a Crisis, as we are told by *Galen in 4 Aph. 70*. And the same Author, *Lib. 3. de Crisibus*, pronounces *Watching* with Signs of Concoction, in acute Diseases, the Forerunner of a Crisis. Of such Patients we read, *1 Prorr. 132—135, 136*. where it is said, “They who on a sudden [ἐὐθὺς, for which some read ἐὐθέως, sedate, composed] appear very much disorder’d, are wakeful, and bleed at the Nose, are in some measure relieved on the sixth Day.” And, *Text. 135*. “They who are affected with an Heaviness of the Head, and a Pain in its fore Part, with perpetual *Watching*, are subject to an Eruption of Blood at the Nose.” And, *Text. 136*. “Perpetual *Watchings*, with sudden Jaunditions and Inquietude, signify an Hæmorrhage, and especially if there has been any previous Discharge of that Nature.” “Again, *Text. 149*. “An Horror, attended with critical Sweats, and returning on the next Day, with unaccountable *Watchings*, portend, in my Opinion, an Hæmorrhage.” Once more, *Coac. 110*. “Sudden Inquietudes with *Watchings*, and black and hard Stools, are sometimes Forerunners of an Hæmorrhage.” These then are the *Watchings* from which we may venture to predict the Recovery of the Patient, on the same Ground, as from Pains, Convulsions, Deliriums, and Anxieties preceding a Crisis.

All *Watchings*, except those before taken notice of, however caused or circumstantiated, are bad; for *Watching* dries the whole Body; and as *Galen, 7 M. M. Cap. 6*. observes, is extremely prejudicial to such as labour under a Dryness, and induces on them, if it continues long, Convulsions, and a Consumption. It is no Wonder, therefore, that, in burning Fevers, obstinate and perpetual *Watchings* bring on mortal Convulsions, since in other Cases they cause violent Inflammations, and, in some Subjects, Fevers, especially as *Galen, Lib. 1. de Sanitatuenda*, observes, in Infants, *Watchings* refrigerates the internal Viscera, by resolving their Heat. Agreeably to this, it is asserted by *Hippocrates, 6 Epid. Sect. 4. Aph. 12*. “In *Watching*, he says, the external Parts are evidently hotter, and the internal colder.” He there teaches us, also, that *Watching* digests and resolves Bodies: Whence it is necessary, as *Galen, Lib. 12. de M. M. Cap. 8*. infers, that by its long Continuance, the Patient must be extremely weakened and exhausted. We may add to this, that *Watching* sements and increases the Crudities of the Humours, as we are told by *Galen, Com. 1. in Lib. de R. V. I. A*.

For the Reasons aforesaid, all *Watchings* in acute Diseases, are to be esteemed bad; but the most pernicious are those which are perpetual, and which by inducing all the bad Symptoms before-mentioned, cannot but afford too just Grounds for prognosticating a fatal Event. It is, indeed, customary for perpetual *Watchings* to bring on Convulsions, and a Delirium; which they effect by two different Ways and Means, one by drying and inflaming the Brain, and the other by an Oppletion of that Part with an hot Humour; since all *Watching*, as we observed before, indicates either a Vacuity and Exsiccation of the Brain, or a Repletion of it with hot Humours, or an Inflammation of that Part. Convulsions and a Delirium from *Watching*, procured by this latter means, are not indeed absolutely fatal; for either by a Resolution and Evacuation of the hot Humour, or a Propulsion of it to some other Part, they are sometimes removed. With relation to this Subject, we read *Coac. 109*. “That in Children under an acute Fever, Costiveness with *Watching*, much Crying and Striving, Alteration of Colour, and great Redness, indicate Convulsions.” But tho’ *Watchings* with those Symptoms are not always mortal, they are, however, very much to be dreaded. Wherefore, *Hippocrates, 7 Aph. 18*. justly pronounces *Watchings*, attended with Convulsions and a Delirium, a bad Sign.

Convulsions and a Delirium, attendant, or consequent, on perpetual *Watchings*, and not caused by a Repletion of the Brain with hot Humours, are absolutely mortal, in the same manner as Convulsions, supervening upon burning Fevers, indicate inevitable Destruction. Thus it was in the Case of the phrenetic Patient, who could not sleep, and dy’d on the fourth Day, as is observed by *Hippocrates, 3 Epid. Sect. 3. Aeg. 4*.

Watchings, with some other attendant Signs, as æruginous Vomiting, and Pain of the Head, portend a furious Delirium

and Death; agreeably to what we are told by the Author of *1 Prorrhet. 10*. “A Pain of the Head, he says, attended with æruginous Vomiting, *Watchings*, and Deafness, are soon succeeded by a Mania;” as it was in the Instance of the phrenetic Subject before-mentioned.

We may conclude, that constant and perpetual *Watchings* in acute Diseases are deadly; as they were in the Case of the phrenetic Person aforesaid; and of the Wife of *Dromedus, 1 Epid. Sect. 3. Aeg. 11*. who continued without Sleep from the first to the fourth Day, and dy’d on the sixth. *Hippocrates, 1 Epid. Sect. 2. Stat. 3*. informs us, that many, under burning Fevers, dy’d after perpetual *Watchings*: Whence, in *Prognost.* he justly pronounces it “a very bad Sign, when the Patient can neither sleep by Day nor by Night;” for either Pain, and great Anxiety, or a Delirium, are signified by it.

Watchings, attended with some mortal Sign, are absolutely fatal. Here we ought attentively to consider the Evacuations attending this constant Want of Sleep; and, if these are all bad, as indicating a symptomatical, useless, or depraved Excretion of Nature, they portend certain Death.

Watchings, accompanied with Cold, copious and constant Sweating of the Head, are bad. With relation to this, we read *Coac. 41*. that “They who are affected with cold Sweats, *Watchings*, and Vicissitudes of Head and Cold, are in a bad State.”

Of no better Signification are *Watchings*, attended with other Excretions, which give no Relief to the Patient, but are Signs of Crudity; such are a Stillation, or Falling by Drops, of Blood from the Nose, and virulent Vomiting.

Sometimes *Watchings* are succeeded by Evacuations, which, affording no Relief, are esteemed very bad, prove injurious to the Sick, and increase the Disease: Such a Consequence in all Evacuations and Symptoms, under which, the Patient might reasonably expect to be eased, is pernicious, as we are taught by *Galen, Com. in Prorrhet.* and other Places, because in acute Diseases, Excretions, or other Circumstances, which use to relieve the Patient, if they answer no such Purpose, are said to be bad; but if they are so far from proving beneficial, that they render the Case of the Sick really worse than it was before, they may safely be pronounced fatal.

As pernicious Convulsions, furious Phrensies, and Tremblings, are frequently the Consequences of continual *Watchings*, so it sometimes happens, that a mortal Coma succeeds them: For, as a long Sleep, after much *Watching*, which refreshes the Sick, is a very good Sign, so a long Sleep, which is so far from refreshing, that the Patient rather finds himself fatigued and injured by it, must be of deadly Signification; agreeably to that of *Hippocrates, 2 Aph. 2*. “Sleep which composes a Delirium, is good;” and the preceding Aphorism, “A Disease, in which Sleep creates Pain and Anxiety, proves mortal:” But where Sleep helps and relieves the Patient, the Disease is not mortal.

A Coma succeeding a perpetual *Watching* is generally fatal, as proceeding from a Refrigeration and Resolution of the natural Heat, which must be highly destructive, as *Galen, Com. in 4 Aph. 67*. observes; for Coldnesses, he there says, which are consequent upon hot and dry Affections, are incurable. A Coma sometimes succeeds a *Watching*, or Want of Sleep, from a Resolution of the Bile, and a dry Evaporation, which was the Cause of that *Watching*, the pituitous Humour still remaining, which moistens and dilutes the Brain; and such a Coma, with Signs of Concoction, and the Strength not much injured, cannot be thought pernicious. *Prosper Alpinus de Præfag. Vit. & Mort. Aegrot.*

FEBRILE CONVULSIONS.

See VULNUS.

A Convulsion in a Fever, is always excited by some Injury done to the Brain, either by Vellications convey’d to it by the Nerves from the inferior Parts, or from an inordinate Appulse, Transflux, or Egress, of the Liquid secreted in the Brain; which may arise from every Cause capable of exciting a Delirium, Coma, or obstinate *Watching*: And on this Account, there is a great Variety in the Ætiology and Cure.

If it continues long, it easily affects the entire nervous System: Whence fatal Disorders are excited.

If Convulsions succeed the Signs of an Inflammation of the Brain, they are generally fatal Symptoms.

If a Discharge of thick Urine is succeeded by one of the aqueous and pellucid kind, and Convulsions immediately follow, it is the worst of Symptoms.

If Convulsions arise in Fevers, after profuse Evacuations, they generally prove fatal; as do those, also, which are accompanied by a perpetual Delirium.

In order to a Cure, the particular Cause is, first, to be investigated, and the affected Part must be discovered, whence the Convulsions primarily arose; then Medicines are immediately to be apply’d, which are capable of correcting Acrimony, of resolving the impacted Matter, and relaxing the

Parts which are contracted. We are, therefore, to attempt the Cure of Convulsions by diluting, relaxing, making Revulsion, and lenifying, never trusting to the specious Character of Antispasmodics.

But if the Head is found to be primarily affected, recourse must be had to the Methods of Cure recommended above, in case of a *Delirium*, and *Coma*. Boerh. Aph.

PROGNOSTICS FROM CONVULSIONS.

Convulsions, when alone, or attendant on other Disorders, though always bad, yet sometimes prove Indications for prognosticating a good Event; but oftener portend Death than Recovery; of which fatal Tendency are those excited in Fevers from a Dryness of the Nerves. *Convulsions* suddenly seizing the Patient in the Beginning of the Disease, afford no certain Prognostic. They are much attendant, also, on Fevers, and indicate nothing of themselves but a Multitude of Humours, without any Tokens of a Recovery, unless they are critical. But we shall treat more accurately of the Prognostics of *Convulsions*, after we have first shewn what they are, with their Causes and Differences.

A *Convulsion*, in Greek *σπασμὸς*, *Spasmus*, according to Galen, de Symp. Caus. Lib. 2. Cap. 2. is an involuntary Tension of the Nerves and Muscles, by which they are reduced to the same Posture and Disposition, as would happen to them from a natural and spontaneous Motion. And in the *Definitiones Medicæ*, ascribed to the same Author, it is said, that a *Convulsion* is an Affection incident to the Nerves and Muscles, by which sometimes the whole Body, sometimes a Part of it, is distended. Hence, this Kind of Disorder is by many properly enough called a *Tension*, and a *Distension*, tho' some make a Distinction between a *Convulsion*, or *Spasm*, and a *Distension*, from that Passage of Hippocrates, 4 Aph. 57. "A Fever coming upon a *Convulsion*, or a *Distension*, [τὸ ἐλάττω] removes the Disorder." But Galen, in Comment, has removed this Difficulty, and very well stated the Case, where he tells us, that of the three different Kinds of *Convulsions*, what the Greeks call *Tetanus*, may more properly be called a *Distension*, and not a *Convulsion*, if it were only, because in such a Disorder the Parts appear not convulsed, but are equally distended both Ways; on which account principally it has the Name of *Distension*.

There is, also, a twofold Distinction of *Convulsions*, one permanent, and without conspicuous Motion, of which there are three subordinate Kinds, one called by the Latins, *Distentio*, by the Greeks, *Tetanus*, and by Celsus, particularly *Rigor*, in which Affection, the Neck, together with the rest of the Body, remains immoveable, and inclined to neither Side, but erected in a right Angle to both. And this seems most properly to be what Hippocrates calls *Tetanus*, a *Distension*, which differs from a *Convulsion*, in that, as we just said from Galen, the Parts appear not to be convulsed.

A second Kind is called *EMPROSTHOTONOS*, [see *TETANUS*] which is, when the Head, Neck, and rest of the Body are contracted towards the Breast; on which account it is called *Tentio ad anteriora*, "a Tension towards the anterior Parts."

The third has the Name of *OPISTHOTONOS*, [see *TETANUS*] from the Greeks; and by the Latins is expressed by *Tentio ad posteriora*, "A Tension towards the posterior Parts." Galen, in his Book of Medicinal Definitions, has comprehended these three Kinds of permanent *Convulsions*, in the following Words: "Travellers, says he, who die of Cold on the Roads, are seized with such Kinds of Rigors as the Greeks call *Emprosthotonos*, *Opisthotonos*, and *Tetanus*, because under such Accidents the Body is inclined sometimes to the anterior, sometimes to the posterior Parts, sometimes neither Way, but is distended in a strait and immoveable Posture."

The other Kind of *Convulsions* is distinguished by frequent and interrupted Motion; and, therefore, called by Physicians, *convulsive Motions*, or *Convulsions*, ex Materia non proportionata, as when they are excited by a Stimulation and Vellication of the nervous Parts, or a violent Straining, and Stretching of the same, as in the Disease which the Greeks call *Epilepsia*, or are caused by Consent from a biting Sensation at the Mouth of the Stomach, or from some Injury received first by the Brain. This last Species of *Convulsions* is not per se, and in Strictness of Speech, called a *Convulsion*, but rather a *convulsive Motion*: And this is either universal, as when the Brain is primarily affected; or particular, from a Vellication of some particular Muscle or Nerve, in the same manner as a permanent or motionless *Convulsion*, is called *universal*, when, from an Affection of the Brain, it seizes the whole Body; and *particular*, when it affects only one Part; as, for Instance, in the Disorder which some call *Spasmus Cynicus*, in which the Mouth is distorted, or rather the Parts of the Mouth are convulsed.

As to the Parts which may labour under a *Convulsion*, or *Distension*, and the Place affected in *Convulsions*, Galen, de Loc. affect. Lib. 3. Cap. 6. tells us, that all Parts of the Body

which are fitted for Motion, may be convulsed; for the Parts of the Body which are moved, are put in Motion by Help of the Nerves and Muscles, which being convulsed, there is a Depravation of that Motion, as it happens in a Grinding of the Teeth, which the Greeks call *Trysmos*, and is a *Convulsion* of the Muscles, as we are taught by Galen, de Loc. affect. Lib. 2. Cap. 2. And in the same Treatise, Lib. 3. Cap. 6. he teaches us from the convulsed Part to know, whether the spinal Marrow, or the Brain, or the Nerves, or which of them, are affected, in the following Words: "When the whole Body is convulsed, all imagine such a Part to be affected, as, like the Trunk with respect to the Branches of a Tree, is the common Trunk of all the Nerves, and not of a few only in one Part, in nature of a Branch; as is the Case, when a Leg, or one of the Hands, happens to be convulsed, where a *Convulsion* of the whole Member shews the Original of the Nerves distributed on it to be affected, from the Example of a Branch of a Tree. But when the whole Body is affected, we must suppose the common Origin of all the Nerves below the Face, which answers in proportion to the Trunk of a Tree, to be affected, that is, the first Parts of the spinal Marrow; for which Reason, the most experienced Physicians adapt their Remedies to those Parts, and take no Notice of the Heart. But if, with the rest of the Body, the Face be, also, convulsed, we take care not only of the Beginning of the spinal Marrow, but of the Brain itself. And, indeed, we often see the Lips, the Eyes, the Skin of the Forehead, the whole Jaws, and the Root of the Tongue, affected with *Convulsions*; and, because we learn from Anatomy, that all these Parts are moved by Muscles, which receive their Nerves from the Brain, we judge that to be affected whenever those Parts are convulsed; but when we see the other Parts of the Body labouring under *Convulsions*, while those remain in a due Disposition, we conclude the Origin or Beginning of the spinal Marrow to be affected."

Having thus learnt to know the Part originally affected by the Part convulsed, we proceed to inquire into the Causes of *Convulsions*; and, first, of those which are perpetual and permanent without Motion. *Convulsions*, says Hippocrates, 6 Aph. 39. "are occasioned either by Repletion, or Inanition." The same is confirmed by Galen, Lib. 2. & 3. de Loc. Affect. & in 4. & 6. Lib. Aph. & Lib. de Trem. Palpit. & Convuls. and in innumerable other Places; but especially, Lib. 2. de Symptom. Caus. where he says, that "a *Convulsion* draws the Nerves and Muscles into the same Posture and Disposition, as that into which they were brought by the animal Force, when in their natural State. Whether, therefore, voluntary Motions are performed by a Tension of the Muscles at their Origin, or an Impletion of them by a flatuous Influx, the Effects are the same in a *Convulsion*, whether from a flatulent Spirit, which may be generated in the Veins, or a Multitude of other Disorders, among which is a Phlegmon, which may create a Tension." And these are all comprehended, according to Hippocrates, under the two general Heads of *Repletion* and *Inanition*, of which the first takes place in a Phlegmon, and the other in burning and dry Fevers. And that immoderate *Impletion* and *Inanition* may either of them cause a Tension in nervous Bodies, we may learn from what happens to the tense Strings of musical Instruments, which break whenever those Instruments be laid in a moist and humid, or a dry and dusty Room; and they are therefore relaxed, before laid aside. This Generation of *Convulsions* is illustrated by Galen, Lib. 3. Cap. 6. in the following Words: "If you observe nervous Bodies, particularly the Strings of an Harp, by an immoderate Distemperature of the Air, distended to such a Degree as to break, you will easily imagine, that the same thing may happen to the Nerves of Animals." But how are Strings, from an Affection of the Air, as when it is immoderately dry or moist, stretched in such a manner as to break? The Humour, to answer, moistens them so as to raise them into a preternatural Tumour, which must of Necessity cause extraordinary Tenseness; on the other hand, as the Sun by drying Skins contracts them, so Dryness draws and stretches Cords and Strings; and thus we observe Thongs of Leather, when dry'd by the Fire, reduced to a State of Tenseness and Contraction.

To these two Causes of *Convulsions*, Galen, in Aph. 25. adds a third, which is, the Weakness of the nervous Parts; on which account Children, he says, are much subject to *Convulsions*, as well as from the crude Aliment with which they abound.

The nervous Parts often labour under a Repletion from a crude Humour, by which they are convulsed, as we are told by Galen, de Symp. Caus. Lib. 2. Cap. 2. Thus it is with Children, who, abounding with crude Aliment, and having their nervous Parts not very strong, are easily affected with *Disten-*

sions, as *Hippocrates* tells us, 3 *Aph.* 25. Hence, 2 *Epid. Sect.* 5. he advises, when Children * are affected with *Convulsions* to excite a Fever, by which means that Disorder, together with the Fever; is sometimes removed in a safe Manner.

To this Head of *Repletion* may be reduced *Convulsions* from an Humidness of the Air, as when we are told by *Galen*, in *Epid. Sect.* 2. that in a moist and cold Constitution of the Air, many Persons, and especially Children, as *Hippocrates* writes, were afflicted with *Convulsions*; and, also, those proceeding from an immoderate drinking of Wine.

Sometimes, also, the nervous Parts are stretched and convulsed from their being imbued with Blood, or bilious Excrements, sometimes from a Flatus, and frequently from a Phlegmon, either immediately, or by Consent of the neighbouring Parts. After this manner are occasioned Tensions of the Hypochondria, which proceed from a violent Inflammation of the Diaphragm, Pleura, or Liver; and to the same Head appertain *Convulsions* from Wounds attended with an Inflammation.

The Parts are dry'd, or, to speak in the Phrase of *Hippocrates*, emptied, or evacuated, as well by a burning Heat, as an immoderate Cold. Of the latter we read, 5 *Aph.* 17. that it "produces *Convulsions* and Distensions;" and, *ibid.* *Aph.* 20. it is said, that "Cold is biting to Ulcers, hardens the Skin, renders Pain insupportable, blackens, and excites febrile Rigors, *Convulsions*, and Distensions." Here *Galen*, in his Comment, says, that "Immoderate Cold excites those *Convulsions* and Distensions, with a Refrigeration of the Nerves; for as it is not convenient, that this Substance should be dissolved by an immoderate Heat, it is no less prejudicial to them to be refrigerated and contracted." For excessive Cold, affecting the Nerves, Muscles, Tendons, and Ligaments, first causes an Inequality of the Skin, by repelling the Heat and Moisture inwards; then dries by expressing the finer Parts, compresses, condenses, hardens, and, by closing the interior Sinuses and Bores, prevents Diffusion and Perspiration, as well as Reception of Aliment, so that the Parts remain rigid, hard, and distended. To this Purpose we read, *Coac.* 23. that "a Rigor, producing an *Opisthotonos*, is mortal;" and *Galen*, in his Book of medicinal Definitions, before quoted, says, that "Travelers oppressed with Cold, die of an *Empyrototonos*, *Opisthotonos*, or *Tetanos*."

Immoderate Heat produces the same Effect, and much more efficaciously; for by dissipating all the humid Substance of the Muscles, and other nervous Bodies, it renders those Parts extremely dry'd and parched; whence they are distended and convulsed. Burning Fevers, therefore, which, like a Fire, dry the Nerves, produce a Distension and *Convulsion* of the same; and, as *Galen*, on 4 *Aph.* 66. teaches, induce *Convulsions* of a pernicious Kind. After the same manner mortal Phrensies, by dissolving the Substance of the Nerves with their immoderate Heat, usually end in *Convulsions*. On the same account, all considerable feverish Estuations have the like Effect by Drying, as we are assured by *Galen*, on 7 *Aph.* 13. and the same Consequence follows from constant Watchings, and all great and immoderate Evacuations and Purgations, as we learn from the same Author, on 5 *Aph.* 3. 4 & 7. *Aph.* 9. And he calls all those *Drynasses*, if I may use the Word, the Causes of *Convulsions*, *de Loc. Affect. Lib.* 3. *Cap.* 5. comprehending them all in the following Words: "For since a *Convulsion* is occasioned either by Labour, Watching, Hunger, Solitude, or a dry and burning Fever, as we see in Phrensies, you may justly impute the Cause to a Dryness and Inanition."

Thus have we assigned the various Causes of perpetual and permanent *Convulsions*, and have reduced them under the general Heads of Repletion, and a Dryness, Evacuation, or Inanition, of the nervous Parts. But *Convulsions* attended with manifest Motion, such as those of the epileptic Kind, and those they call *convulsive Motions*, have other Causes. For sometimes they proceed from a gross and viscid Humour obstructing the Ventricles of the Brain; which is the Cause of that universal *Convulsion* which the *Greeks* call *Epilepsia*, and others *Morbus Comitialis*, according to *Galen*, *de Loc. Affect. Lib.* 3. *Cap.* 7. where he tells us, that "the *Epilepsy* is a *Convulsion* of all the Parts of the Body, not perpetual, as is observed in the *Empyrototonos* and *Tetanos*, but incident at certain Intervals; and this *Convulsion* is occasioned when the Brain is primarily and in itself affected; whence, by Consent of Parts, we often observe Bodies to labour under *Convulsions* both general and partial." The same Author, *de Loc. Affect. Lib.* 5. *Cap.* 6. has demonstrated, that a Disorder of the Mouth of the Stomach has not only occasioned *Convulsions*, by communicating the Injury to the Brain, the Origin of the Nerves,

but other very severe Symptoms; and, he tells us of a young Grammarian, who, whenever he was too intent on Teaching or Thinking, or fasted too long, or fell into a Passion, was seized with a Fit of an *Epilepsy*, from a bilious and acrid Juice vellicating the Mouth of the Stomach. And, in his Comment on 5 *Aph.* 1. he speaks of a young Man who was frequently affected with an universal *Convulsion*, from an æruginous Humour gnawing the Mouth of the Stomach; and recovered not from his Fit, before he had discharged the æruginous Matter by Vomit. Again, in his Book of *Venesection* against *Erasistratus*, he tells us, that *Diodorus* the Grammarian was affected with *Convulsions* after long Fasting.

A *Convulsion*, also, is occasioned by much Straining and Retching, when the Stomach labours to expel some malignant and noxious Matter, in the same manner as a true *Epilepsy* is induced, while the expulsive Faculty in the Brain makes Efforts to expel the gross and viscid Juices which obstruct its Ventricles, and intercept the Passage of the animal Spirits thro' them. *Hippocrates*, therefore, had good Reason to say, that *Convulsions* were produced from White Hellebore, by its pernicious Juices gnawing and vellicating the Mouth of the Stomach. An Instance of this fell within our own Observation, while we practised Medicine at *Padua*, in a young Man, who, by the Carelessness of an Apothecary, took White instead of Black Hellebore. But many Instances may be given of such as have been affected with convulsive Disorders from some bilious, or æruginous Humour, or some poisonous Juice infesting the Stomach, and vellicating its Mouth.

It appears, therefore, that an Injury done to the Mouth of the Stomach is, by Consent of Parts, communicated to the Brain; whence *Convulsions* are excited. And not only the Mouth of the Stomach, but the Uterus, and this last, most of all, communicate, by Consent, their Disorders to the Brain; whence hysteric Women are often observed to be molested with *Convulsions*. *Galen*, *de Loc. Affect. Lib.* 6. *Cap.* 5. gives an Instance of this in a Widow, who was affected with *Convulsions*, from the Uterus being injured by a Retention of the Semen; and was freed from them by gross, fetid, seminal Excretions. Hence the Author of 1 *Prorrh.* T. 129. says, "that Women affected with Hysterics, without a Fever, are subject to *Convulsions*; as was the Case, for Instance, of *Dorias*."

And not only from the Uterus, but from other Parts, by a poisonous and highly pernicious Vapour ascending to the Brain, may convulsive Disorders be excited; in Proof of which, *Galen*, *de Loc. Affect. Lib.* 3. *Cap.* 7. gives Instances of two Boys affected with an anomalous *Epilepsy*.

Such, then, we may suppose, are the Causes not only of permanent, but moveable *Convulsions*; but *Galen*, *Lib.* 12. *Meth. Med. Cap.* ult. has comprehended in few Words the Cause of all *Convulsions*, and convulsive Motions, where he says, they are occasioned either by a Dryness, Repletion, a considerable Inflammation, a biting Humour, or violent Cold.

But we have treated, we hope with sufficient Accuracy, of the Causes of *Convulsions*; and proceed now to consider the Signs from which we may predict their future Appearance. And here we read, *Coac.* 85. 157. that Deliriums increasing sensibly in Ferocity become at last outrageous, and portend *Convulsions*; and a little after, T. 162. "They who are affected with a Pain of the Head, and labour under a Catochus, with a Constipation of the Belly, have a fierce Look, and a florid Colour in the Face, are seized at last with an *Opisthotonos*." That *Convulsions* should succeed mortal Inflammations of the Brain, is agreeable to Reason, since they are Signs of a mortal Phrensy, under which it is proper and usual for the Patient, as *Galen* says in 1 *Prorrh.* to be convulsed, and to die in *Convulsions*. The Author, also, of 1 *Prorrh.* T. 28. tells us, "That frequent Mutations in Phrensies indicate *Convulsions*." And, *Coac.* 171. we read, "That an acute Pain in the Head, attended with a Torpor and Heaviness, are usually succeeded by *Convulsions*." And, *ibid.* T. 177. "That a Pain of the Head, with a small Sweat, and a Constipation of the Belly, end in *Convulsions*."

These, then, are the prognostic Signs of *Convulsions*, of which Signs only violent Pains of the Head, and a furious or outrageous Delirium are to be reckoned as certain, the other Marks not affording any sure Grounds for Prediction. As for Children, we are told by *Hippocrates*, in the *Prognostics* towards the End, that "They become affected with *Convulsions*, if they labour under an high Fever, and are collicive, wakeful, frightful, much given to Crying, and change their Colour to pale, livid, or red; and these Symptoms are incident to Children from their Birth to their seventh Year."

* The Author of the Notes and Emendations to *Prosper Alpinus*, reads *Puerperas* with *Fossius*, as rendered from *παιζαι*, and not *Pueros*, with *Alpinus*, because, as he says, no such Directions concerning Children are to be found in all the *Epidemics*.

Children more advanced in Years, and full-grown Persons are not so subject to *Convulsions* in Fevers, unless at some very violent and dangerous Crisis, as is usual under a Phrensy.

But we have said enough on this Head, and shall now take into Consideration the *Prognostics* from *Convulsions* which offer themselves to our Examination, in order to the Prediction of Death, or Recovery in acute Diseases. And here, first, we shall speak a little of those *Convulsions* which are not attended with a Fever. *Convulsions* of this Kind, which proceed from a Repletion of the nervous Parts with a crude Humour, are less dangerous than such as are excited by a Dryness and Arefaction of the Nerves; and *Convulsions* which owe their Original to a Repletion, are distinguished from the others by their Suddenness.

Of the three distinct Kinds of *Convulsions*, what they call the *Tetanus* is the most acute Disorder, and often kills in three or four Days; the Muscles of the Jaws and the Gullet being convulsed in such a manner, that Deglutition is entirely destroyed, and the Patient rendered incapable of being nourished with Food, or relieved with Medicines: But when the Disease is protracted to a greater Length, there are good Hopes of Recovery. What we have said is the same with that of *Hippocrates*, 5 *Aph.* 6. *Whoever happen to be seized with a Tetanus, die in four Days; but if they survive that Term, recover.* The Patient, in such a Case, always meets with the best Relief from a supervening Fever; for the febrile Heat consumes the Humours which obstruct the nervous Parts. On this Subject we find *Galen* discoursing, in 2 *Aph.* 26. where he says, *If any Person in Health happens to be suddenly seized with Convulsions, they must of Necessity be occasioned by a Plenitude. Now the Nerves suffer a Repletion from cold and viscid Humours, by which, also, they are nourished, so that they become convulsed: And this Disorder is remedied by a supervening Fever, which heats the cold, and attenuates and dissolves the viscid Humours.* This is no more than a Comment on that of *Hippocrates*, 4 *Aph.* 57. before-quoted. Very justly, therefore, it is said, 2 *Aph.* 26. that it is better for a Fever to come upon *Convulsions*, than *Convulsions* upon a Fever. And with good Reason does the same Author *, 2 *Epid. Sect.* 5. advise exciting a Fever in Children for *Convulsions*; by which means, the crude and gross Humours are heated, attenuated, and dissolved. Hence the more violent the supervening Fever, and the more intense its attendant Rigor, the more effectually will it remove the *Convulsions*. Thus qualified is a Quartan, which is accompanied not only with an intense Degree of Coldness, but a most efficacious Heat; by virtue of which it gives Relief under a great Disease, if we may believe *Hippocrates* and Experience, for which we have good Reason; for this Kind of Fever is attended with a more effectual Heat than other Fevers; because it has its Foundation in a more gross and dense terrene Matter; as may be inferred from what we read 5 *Aph.* 70. where we are told by *Hippocrates*, that they who are seized with a Quartan are not very subject to *Convulsions*; and such as are first taken with *Convulsions*, are relieved by the coming-on of a Fever. Such is the good Effect of a Quartan, not only by its Heat, which effectually dissolves the Repletion of the nervous Parts; but by the Intenseness of its Cold, with which it shakes the Body so long till the Humour is by that Motion digested, or expelled from the nervous Parts. A Fever, therefore, coming upon *Convulsions*, is good; because it removes the Repletion by a Dissolution. And this is further illustrated and confirmed by *Hippocrates*, in what he says of those who are convulsed from Drunkenness, 5 *Aph.* 5. where we read, that if a Person who is drunk be taken suddenly speechless, he dies in *Convulsions*, unless a Fever seizes him.

And these are the *Convulsions* from which we may hope a good Event, especially in Children; who, the more subject they are to *Convulsions*, both on account of the crude Aliment with which they abound, and the Weakness of their nervous Parts, as *Galen*, on 3 *Aph.* 5. has it, the less are they in danger from such Disorders, and the more easily are they relieved from them by a supervening Fever. Hence *Convulsions* in Children labouring under Fevers, are not so much to be dreaded; but in adult Persons they are usually pernicious, as they are generally owing to a Dryness and Rarefaction of the nervous Parts by the febrile Heat, than which nothing is more pernicious, in the Opinion of *Galen*; who, in his *Metb. Med. Lib.* 12. Cap. 8. has these Words, with respect to a *Convulsion* from Dryness: *We must know, he says, that an Affection of this Kind, if ever it be cured, requires Humectation. But it is extremely difficult to be cured, or rather incurable, if it be contracted by a Fever, and succeeds a Phrensy of the most mortal Kind. For my part, I never knew, nor heard of any one cured, who was convulsed in this manner.* In Children, indeed, affected with feverish Disorders, *Convulsions* are not so bad, or so much to be dreaded, as we

shall by-and-by demonstrate more plainly, from 1 *Epid. Sect.* 2. but in all other Ages, *Convulsions* proceeding from Dryness are pernicious. For this Reason, *Convulsions* attending Fevers are to be dreaded. Whence *Hippocrates* might very justly say, that it is better for Fevers to succeed *Convulsions*, than for those to come upon Fevers; for if they are the Consequence of Purgation, or any other considerable Evacuation, they are of the worst Sort, because all Evacuations dry the Body. In Confirmation of this Doctrine, we are told, by the Author of 1 *Prorrh. T.* 145. that a violent and copious *Hæmorrhage* from the Nose sometimes induces *Convulsions*; and, by *Hippocrates*, 5 *Aph.* 3. that *Convulsions* or *Hiccups* succeeding a copious Discharge of Blood by the Anus, are bad: And *ibid.* 56. that *Convulsions* and a *Lipthymy* after a Flux of the Menses, are bad. Again, 7 *Aph.* 9. we read, that a *Delirium* or *Convulsions* succeeding an *Hæmorrhage*, are bad. The same Position is more generally and expressly asserted by *Galen*, in his Comment on *Lib.* 6. *Aph.* where he says, that *Convulsions* from an Evacuation are most acute and pernicious. To the same Purpose we read, 7 *Aph.* 13. that *Convulsions*, or a *Tetanus*, after violent burning Heats, are bad; and, *ibid.* *Aph.* 18. *Convulsions* and a *Delirium* after Watchings, are bad. The Reason is, because violent Heats, or burning Fevers, and immoderate Watchings, resolve and evacuate the humid Parts. In the same manner, that is, by drying the Body, do immoderate Purgations produce pernicious *Convulsions*, according to 5 *Aph.* 4. where it is asserted, that *Convulsions* or *Hiccups*, succeeding an *Hypercatarsis*, (or profuse Purgation) are bad. Moreover, we read, 7 *Aph.* 25. that *Convulsions* from a purging Draught are mortal. And 5 *Aph.* 1. that *Convulsions* from (white) Hellebore are deadly.

Having spoken hitherto of the *Prognostics* from what they call permanent, or perpetual *Convulsions*; we proceed to treat, in a few Words, of such *Convulsions* as are occasioned by a Straining, or Stimulation, while Nature attempts an Excussion of the gross and viscid Humours which obstruct the Ventricles of the Brain, as in a Fit of the Epilepsy. *Galen*, in *Lib.* 5 *Aph.* says, that an Epilepsy is not a very acute nor dangerous Disease; and justly, because it belongs to the Lists of chronic Diseases; and the Patients are often perfectly freed from it, especially Children; according to that Aphorism of *Hippocrates*, 2 *Aph.* 45. *Very young Persons subject to an Epilepsy, are cured chiefly by Change in Age, Place, and Way of Living.* And 5 *Aph.* 7. we are told who are capable, and who are incapable of a Cure; where it is said, "An Epilepsy before the Age of Puberty, admits of a Metastasis (a Solution, see *ΜΕΤΑΣΤΑΣΙΣ*); but if it molests the Patient after twenty-five, it generally accompanies him to his Grave." And *Galen*, in his Treatise *de Puero Epileptico*, tells us, that he had cured several Children; and in his Book *de Purg. Med. Fac.* that in several others, who were not cured, he had prevented a Return of the Disorder, by the proper Precautions of Purgings and Phlebotomy in the Spring.

As for other Kinds of *Convulsions*, which are excited from Consent of Parts, by some acrid Humour, or Poison, or from some poisonous and malignant Vapour, they are all curable. Of this Nature were the *Convulsions* under which the Grammarian before-mention'd labour'd, from bitter Bile; and the young Man, also, spoken of, who was molested with an æruginous Matter, gnawing and vellicating the Mouth of the Stomach, and was freed from the same by Vomiting. Examples may, also, be given, of *Convulsions* from malignant Vapours, remov'd, and perfectly cur'd; but we have, perhaps, said enough, as to the *Prognostics* from *Convulsions* excited without a Fever; and shall, therefore, proceed to speak of such as happen under acute Fevers.

Of the Signification of CONVULSIONS in acute Fevers.

All *Convulsions* which happen in the Beginning of Diseases, indicate a Multitude of Humours, by the nervous Parts labouring under a Repletion, which occasions a Tension, or *Convulsion*. This Kind of *Convulsion* affords no sure Grounds for Prognostication, but indicates, however, that the Disease is very severe, and not void of Danger; since all Disorders, proceeding from a Multitude of crude Humours, are violent, and dangerous. Instances of this are many, in the Books of the *Epidemics*, of those who were restored to Health; particularly, the Woman who was three Months gone with Child, and lay ill in the Strand; Pythion, who liv'd near the Temple of Tellus; the Man who lay ill in the Garden of Drakes; Chæron at Demæretus; and the morose Woman, who was seized with *Convulsions*, as it were, on a sudden, on the first Day. In all these Cases, except his who lodged in the Garden of Drakes, where a Crisis was indicated, *Convulsions* were Signs of a Multitude

* The Passage here meant runs thus: ὃν λέγουσιν στασιμὴ ἐπιληψία. τῶν τούτων. Where our Author, for λέγουσιν, reads παύσις; and translates τῶν τούτων literally, Ignem exorcismus seu inuicium; but we have followed *Fection*. See the preceding Note.

of Humours, and had nothing in them of Certainty, with respect to Prediction. In *Chæron* and *Pythion*, indeed, they were not so much to be dreaded, because on the ninth Day attended with a Discharge of Urine, in which appeared some Signs of Concoction; but in the Case, excepted they were critical: For, as *Galen* says, in his Comment, “the Delirium on the ninth Day, and squinting of the Right Eye, were usual Incidents in a Crisis.”

Convulsions, also, in Fevers which proceed from the Brain, affected by Consent of Parts from a Disorder in the Mouth of the Stomach, are not to be feared, since they may be remov'd by a Vomit. An Instance to this Purpose we find recorded by *Hippocrates*, 5 *Epid. T.* 40. in “the Son of *Hermophilus*, who was ill eleven Days. His Disorder was a Fever, and he took no Sustenance: On the first Day he was delirious, but recovered his Senses at Night. The next Day he lay speechless, under a Stertor, with his Eyes distorted, and was feverish; but by Intromission of a Feather he vomited black Bile; and, by means of a Clyster, had a plentiful Discharge of stercoraceous Matters by Stool.”

Convulsions, in such Cases, proceeding from the Uterus, are, also, easy to be cured; according to that in 1 *Prorrhætic*. 119. “*Convulsions* in hysterical Women are easily removed; as in the Case of *Dorcas*.” [See a more just Translation of this Passage before.]

Convulsions, also, in Children affected with feverish Disorders, as they are no Indications of any great Alteration from a healthy State, because Children abound much with crude Aliment, and have, besides, weak Nerves, are not much to be dreaded. “Children, says *Galen*, *Com. in 1 Epid.* because of the Weakness of their Nerves, are very subject to *Convulsions*.” And the more easily they are liable to be convulsed on slight Occasions, the less is the Danger. It is no wonder, therefore, if Disorders of this Kind are not so formidable in Children, even under Fevers, as in adult Persons. To this Purpose is the Observation of *Hippocrates*, 1 *Epid. Sect.* 2. “that many were at first seized with *Convulsions*, and a Fever, especially Children; the Fever was, also, succeeded by *Convulsions*. These Symptoms were generally of long Continuance, and had no ill Consequence, except in those where all other Signs were pernicious.” And the same is confirm'd by the Author of the *Coac. T.* 356. where he says, that “*Convulsions* succeeding a Fever are mortal, but least of all so to Children.” But if to *Convulsions* there succeeds a Fever, or, if there be a Fever already, an Exacerbation of the same, it is a good Sign, with respect to the *Convulsions*, provided they proceed from a Repletion of the nervous Parts. Hence we are told, *Coac.* 358. “that an acute Fever, coming upon *Convulsions*, removes the Disorder; whether it is a new Fever, or an Exacerbation of the old.” The same Symptom is much alleviated by a Discharge of much vitreous Urine, or what resembles Semen.

Convulsions in the Beginning of Fevers, if the Fever increases, usually cause an Alleviation of the Rigor. Thus it was in the Case of *Philistides*, the Wife of *Heraclides*, 7 *Epid. T.* 130. “who, it is said, was seized with a high Fever, and a Redness of the Face, without manifest Cause; soon after, on the same Day, she was affected with a Rigor, and recovered no Heat; then was convulsed in her Fingers and Toes; and, shortly after, her Heat was revived. On the second Day she had a new Fit of a Rigor, but recovered a little more Heat than before; her Redness was less, and the supervening *Convulsions* were more moderate.”

We may add, that some Sorts of *Convulsions* in Fevers much alleviate, and even remove the Disease; and these ought to be called *critical*, being occasioned by a Translation of the morbid Matter from the Veins to the Nerves and Muscles; and if they effect a Solution the first Days, they are critical and salutary, according to *Coac.* 157. where we read, “that a Convulsion excited in a Fever removes it the first, second, or third Day; but if it transgresses the Time in which it first began, and ceases not, it is a bad Sign.” *Convulsions* of this Nature are occasioned, as we said, by a Metastasis of the morbid Matter from the Veins to the nervous Parts; which Metastasis, or Translation, may possibly diminish, or even quite remove the Fever, the Humours being excreted from the Veins, and no longer left to putrefy in them.

And thus far have we spoken of those Kinds of *Convulsions*, which, though not properly good, for all *Convulsions* in themselves are bad, yet sometimes happen to be salutary Prognostics. We come now to treat of those which are universally bad and pernicious, and of destructive or fatal Signification.

It is an Observation of *Hippocrates*, *Lib. Prognost.* that in acute Diseases a *Convulsion* of the Testes and Pudenda is succeeded by a violent Pain, or Death; and *Convulsions* in acute Fevers are always of bad Signification to adult Persons, but worst of all in burning Fevers, as we are assur'd by *Galen*, in

4 *Aph.* 66. because these dry the Nerves like a Fire, and excite pernicious *Convulsions*. We have observ'd, that *Convulsions* from a Dryness of the nervous Parts are not only difficult, but impossible to be cur'd; for which Reason, they must be always pernicious in acute Fevers, as being occasion'd by a Dryness of the Nerves, from a Consumption of the humid by the igneous Heat of the Fever. Thus *Galen*, in 4 *Aph.* 35. tells us, “that in burning Fevers, if the whole Body be dry'd, and a *Convulsion* of the Nerves happens to proceed from that Dryness, it is a very great Disorder, and almost incurable, because a long time is requir'd for removing the Dryness of the Nerves; whereas the Violence of the Disease will not allow Time to Nature, but speedily exhausts the Strength, and destroys the Patient.” *Hippocrates*, therefore, had good Reason to say, that “*Convulsions* and violent Pains about the Viscera, in acute Fevers, are bad;” but if attended with a Decay of the Strength, they shew Death to be very near. *Hippocrates*, 4 *Aph.* 49. is very express and elegant to this Purpose, when he says, “In a not intermittent Fever, if the Lip, or Eyebrow, or Eye, or Nose, be distorted, or the Patient cannot see, or hear, the Body being at the same time very weak; which ever of these Symptoms appears, Death is at hand.” Thus it happened, for Instance, to the Wife of *Dromedades*, 1 *Epid. Sect.* 3. *Ægr.* 11. who died suddenly in *Convulsions* which began at the Head.

Convulsions in a Delirium are very dubious, but in Phrenesies are the most pernicious of all Symptoms, and indicate the speedy Approach of Death. *Galen*, as before observ'd, *M. M. Lib.* 12. *Cap. ult.* says, he never knew or heard of any Person who recover'd in such Circumstances. *Hippocrates*, in his Description of the Epidemic Constitution, 1 *Epid. Sect.* 2. says, that those who were affected with Phrenesies, were convulsed, and molested with virulent Vomiting; and some of them died suddenly. And this he had an Opportunity of observing more exactly, in the Case of the phrenetic Patient, 3 *Epid. Sect.* 3. *Ægr.* 4. who on the second Day, in the Morning, lost his Voice, had a high Fever, sweated, without Intermission of the Fever, was affected with Palpitations in all Parts of his Body, and at Night with *Convulsions*. On the third Day all the Symptoms were exasperated; and on the fourth he dy'd.

We have before demonstrated, from *Hippocrates* and *Galen*, that it is a Property of mortal Phrenesies to end in *Convulsions*: For it is the Nature of a true Phrensy to excite *Convulsions* a little before Death, the Nerves being dry'd by an Inflammation of the Brain: We have an Instance to this Purpose in the Maid-servant of *Canon*, 7 *Epid. T.* 98. who dy'd at the End of forty Days, and was speechless and convuls'd for some Days before her Decease.

Tremors ending in *Convulsions*, or *Convulsions* from Tremors, are affirm'd by *Galen*, on the *Prorrhætics*, to be mortal.

Convulsions occasion'd by Pains, or obstinate Watching, in acute Fevers, are pernicious, 7 *Aph.* 18. and so are those which proceed from profuse Purgation, or immoderate Evacuations of any Kind, 5 *Aph.* 3. 4. 56. before quoted. The Reason is, because all immoderate Evacuations dry the whole Body, and occasion a *Convulsion* from a Dryness of the Nerves, which is of the worst Sort, as we have observ'd. Hence *Galen*, *Com. in 7 Aph.* says, that “a *Convulsion* from an Evacuation is most acute and pernicious.”

A *Convulsion* proceeding from an Inflammation of the *Pleum* is pernicious, 7 *Aph.* 10.

Convulsions from Wounds are, for the most part, mortal. Death is not the necessary Consequence of all *Convulsions* occasion'd by Wounds, as *Galen* observes, *Com. in 5 Aph.* though *Hippocrates*, 5 *Aph.* 2. pronounces them mortal. They are, however, for the most part, deadly; and we have many Instances of it in the *Epidemics*, particularly in *Scamander*, who was convulsed after a Section; another from a Wound with a Dart; the fair Daughter of *Nireus* from a Blow; a certain Pilot from a Fracture of the Finger; another from a Luxation of the Finger; who all died of *Convulsions*. Of *Scamander*, 5 *Epid.* 15. it is said, that “his Hip was sphacelated, and the Bone had for a long time been dislocated. The Operation of the great Section was performed upon him, and he was cut home to the Bone, and the Wound afterwards cauterized. The twelfth Day after the Section he began to be taken with *Convulsions*, which held him pretty strongly; he was convulsed from the Leg, on the infirm Side, up to the Ribs; and the *Convulsion* was communicated to the other Side; the Leg was contracted and extended; the other Limbs were moved, and his Jaws set. The Patient died in *Convulsions* on the eighth Day after he was first seized with them.” In the second Instance, *ibid. T.* 47. it is said, “that a certain Person received a Wound with a sharp-pointed Dart, a little below the Neck behind, which appeared scarce worthy Notice; for it was not deep. But, not long after the Dart was taken out, the Patient felt himself distended, and drawn backwards,

“ backwards, like one seized with an *Opisthotonos*; his Jaws
 “ were under a Constriction, and if he received any Liquid
 “ into his Mouth, and tried to swallow it, the same was dis-
 “ charged again at his Nostrils, and he immediately grew worse
 “ and worse in all other respects, and died on the second Day.”
 The tragical Story of the beautiful Virgin-daughter of *Nireus*
 is thus related: “ This young Woman being about twenty
 “ Years of Age, in playing and sporting with one of her
 “ female Friends and Companions, received a Blow from her
 “ with the Flat of the Hand, on the fore Part of the Head:
 “ She was immediately taken with a Dimness of Sight, and her
 “ Breath failed her; and when she came home she was imme-
 “ diately seized with a high Fever, attended with a Pain of
 “ the Head, and a Redness about the Face. On the seventh
 “ Day she had a Discharge of above a Cyathus of fetid, red-
 “ ish Pus by her Right Ear, and she seemed to be better, and
 “ easier; but the Fever increased again upon her, with a Cata-
 “ phora; she lost her Voice; the Right Side of her Face was
 “ contracted; she fetch’d her Breath with Difficulty; labour’d
 “ under Convulsions and Tremblings, with an Impediment of
 “ the Tongue, and a Stupor of the Eye; and died on the
 “ ninth Day.” Again, *ibid.* T. 74. we have a pretty remark-
 able Case of a “ Pilot belonging to a great Ship, who crushed
 “ the fore Finger of his Right Hand, and the Bone below it,
 “ with an Anchor: The Consequence was, an Inflammation,
 “ Sphacelus, and a Fever; he had a gentle Purge administer’d,
 “ and his Heats and Pains were mild and favourable. Some
 “ Part of his Finger was separated, and after seven Days a
 “ laudable Ichor was discharged from the Wound. Some time
 “ after he complained of an Impediment in his Tongue,
 “ whence an *Opisthotonos* was predicted, and a Tendency to
 “ that Disorder further appeared first from a Constriction of
 “ the Jaws, and afterwards by an Affixion of the same to the
 “ Neck. On the third Day he was wholly convulsed, and
 “ under a perfect *Opisthotonos*, attended with a Sweat; and
 “ on the sixth Day from the Prediction he died.” Much of
 the same Nature was the Case of *Teiephanes*, the Son of *Harpalus*
 by his freed Woman, related *ibid.* T. 75. “ This young
 “ Man had his Thumb luxated towards the lower Parts, the
 “ Consequence of which was, an Inflammation, and Pain.
 “ When the Luxation was reduced, he went into the Field,
 “ and at his Return had a Pain in his Loins; he bathed, and
 “ towards Night had a Constriction of the Jaws, and was
 “ seized with an *Opisthotonos*. A spumous Saliva made its
 “ way through his Teeth, with much Difficulty; and on the
 “ third Day he died.” In the same manner one *Tychon*, *ibid.*
 T. 94. who received a Wound in his Breast by a Dart from an
 Engine, at the Siege of *Datos*, died suddenly, on the third Day,
 in Convulsions. From these Cases it appears, that Convulsions
 from Wounds are generally mortal.

Convulsions of the permanent Kind from drastic, or
 very strong Cathartics, or poisonous Medicines, are fatal.
 Thus Convulsions from Hellebore taken inwardly, are by
Hippocrates pronounced mortal, 5 *Aph.* 1. and, in general,
 Convulsions from any violent Cathartic are by the same Au-
 thor judged fatal, 7 *Aph.* 25. And he gives an Instance of
 the same, 5 *Epid.* T. 53. “ in a young Woman about twenty,
 “ who took a Medicine to procure Abortion; after which she
 “ was taken with a Pain, and vomited much bilious, pale, and
 “ porraceous Matter; and when she drank was convulsed, and
 “ bit her Tongue. On the fourth Day I (*Hippocrates*) at-
 “ tended her, and observed her Tongue to be much swelled,
 “ [μεγάλη] and black, and the White of her Eye to be red:
 “ The same Day, towards Night, she died.” In the same
 Book, T. 85. he gives us a Relation of a young Man who died
 in Convulsions, from swallowing a Serpent [See the Story under
 the Article *ARGES*]. And 7 *Epid.* T. 20. we have an Ac-
 count of a Woman labouring under a Quinsy, who was con-
 vulsed on the fourth Day, and died on the fifth or sixth.

These, then, are the mortal Convulsions observed in acute
 Diseases; and the most pernicious of them all, as we have ob-
 served, are those which happen in acute and burning Fevers,
 especially when consequent upon a Phrensy; and that Convul-
 sions from Wounds are very much to be dreaded, we have
 proved, from Cases related out of *Hippocrates*. It remains to
 give some Marks or Signs by which we may know whether
 those Kinds of Convulsions, which in the Beginning of acute
 Diseases are necessarily owing to a Repletion of the nervous
 Parts, or at any other time of the same acute Diseases, are by
 the same Cause in any manner whatsoever excited, are salutary
 or pernicious. For our Satisfaction in this Point, we are taught
 to form a Judgment of such Convulsions from the Signs which
 precede, accompany, or follow them: And here we ought to
 have a principal Regard to the Signs of Concoction, and Cru-
 dity: For when Convulsions appear under an absolutely crude
 State of the Disease, they always threaten a bad Event. And,
 indeed, those Kinds of Convulsions, when pernicious, never use

to appear alone, but attended with other pernicious Signs.
 Thus it was in the Cases of the Wife of *Philinus*, the Wife of
Dromeades, *Philistres*, the phrenetic Person, and the Woman of
Cyzicus, related in the first and third Books of the *Epidemics*;
 to all which Persons these Convulsions proved fatal. In the Wife
 of *Philinus*, 1 *Epid.* Sect. 3. Ager. 4. these Convulsions appear’d
 on the eighth Day in great abundance, attended with Pain, and
 a high Delirium. The Convulsions continued upon her the ninth
 Day; on the eleventh Day, after being convulsed, she voided
 great Plenty of white, thick, turbid Urine, which deposited no
 Sediment; and these concomitant and subsequent Signs were,
 no doubt, to be esteemed mortal. Much of the same Nature
 was the Case of the Wife of *Dromeades*, 1 *Epid.* Sect. 3. Ager.
 11. for “ on the sixth Day, in the Morning, she was seized
 “ with a new Rigor, but soon recovered Heat; sweat in all
 “ Parts of her Body; was cold in her extreme Parts, and de-
 “ lirious; her Respiration was great (full), and at long Inter-
 “ vals [ἐπαύριον. See *ARÆAS*]; and soon after she died suddenly
 “ in Convulsions, which began at the Head.” The Signs pre-
 ceding, it must be observed, are related, among others, to be
 an Evacuation of thin, oleous Urine, and a small Distillation of
 Blood from the Nose; which, with the others before-mention’d,
 portended nothing but Death. The same Judgment was to be
 form’d from a Tension of the Hypochondria in *Philistres*, 3
Epid. Sect. 2. Ager. 4. who died on the fifth Day; for his
 Convulsions were preceded by an Inflammation of the Dia-
 phragm, with other very bad Signs. In the phrenetic Patient,
 3 *Epid.* Sect. 3. Ager. 4. besides what we have before proved
 out of *Galen*, that all Convulsions are destructive, his Convul-
 sions were, moreover, attended with other mortal Signs; such
 as, on the first Day, virulent Vomiting, a Fever with a Hor-
 ror; a copious, constant, and universal Sweat; and a high De-
 lirium: On the second Day a Loss of Voice; a high Fever;
 Sweating, without any Remission of the Fever; and Palpitations
 in all Parts of the Body: These, among others, were the per-
 nicious Signs which preceded those fatal Convulsions, which seiz’d
 him the same Night, and were sure Prognostics of his Death,
 which happened on the fourth Day. Thus, also, the Woman
 of *Cyzicus*, who was taken with Convulsions on the fourteenth
 Day, had them accompanied with a Coldness of the extreme
 Parts, and a Delirium, which never went off, in an absolutely
 crude State of the Disease.

Thus much we think proper to be said of Convulsions, with
 respect to their Prognostics; and under them some may, per-
 haps, think, that we should have comprehended the *Singultus*,
 or *Hiccough*, which is a Species of Convulsions: But since the
Hiccough is a very particular Convulsion, affecting only the
 Stomach, we have chosen to treat of it apart, under its proper
 Article; and the rather, because *Hippocrates* has written of the
 same as distinct from Convulsions. *Prosper Alpinus de Præfag.*
Vit. & Mort.

FEBRILE SWEATS.

A Sweat in the Beginning of an acute Fever, whose Cause is
 somewhat obstinate, arises from a lax Debility of the extreme
 Vessels, a vehement Circulation of the Blood, and a ready
 Separation of the aqueous Particles from the other Principles of
 the Blood.

If it perseveres, it deprives the Blood of its diluting Fluid,
 inspissates the Remainder, and causes fatal Obstructions, it being
 afterwards almost impossible to dilute, or resolve the Blood:
 Hence almost every kind of acute Disease may be produced.

These Sweats are, therefore, always to be restrained in
 the Beginning, unless it is certain that the Matter, which ex-
 cites the Disease, is sufficiently thin to be carried off, together
 with the first Sweats.

Sweat is check’d by rising out of Bed, and sitting up; by
 avoiding too many Integuments; by admitting the cool Air;
 by abstaining from warm and heating Medicines; by using
 copious Draughts of mild, soft, and cool Liquors; that the
 Loss of what is dissipated may be quickly repair’d; and by
 checking the Violence of the Circulation.

PROGNOSTICS IN ACUTE DISTEMPERS FROM SWEAT.

As the Crisis of acute Diseases often turns upon Sweats, the
 Prognostics which may be formed from them, with respect to
 the Fate of the Patient, deserve to be carefully considered.
 For this End, therefore, we shall first explain the Nature of
 Sweat, with its Differences; and, also, its Causes; that we
 may understand how it is generated.

We say, then, a Person *sweats*, when he excretes through
 the Pores of the Skin a Humour which is actually moist; to
 distinguish it from Perspirations, or Exhalations, which pass
 through the same Pores, and are called, by Physicians, Insen-
 sible Evacuations; because they are imperceptible to the Senses.
 Whence it follows, that Sweat is a particular Sort of sensible
 Evacuation made through the Pores or Passages of the Skin.

As to the Differences of *Sweats*, they are of several Kinds: Some are taken from their *Substance*; in which respect they are sometimes thick and viscid, sometimes thin, and without any Viscidity: They differ, also, in *Figure*; for some, as we are assured by *Hippocrates*, *Lib. Prognost.* appear like Millet; others are in the Form of Drops. There is a Distinction observ'd in their *Colour*; for some are yellow, others green; and, besides, they must of Necessity assume the Colour of the Humour from which they are excreted through the Skin. There is some Difference, also, to be made in their Taste, though they are all, as *Galen* says, *Lib. 10. Simpl. Cap. de Sudore*, more or less salt and bitterish, as are the Humours whence they are evacuated. They differ in Smell, since some are fetid, others not; in Quantity, some are copiously effused, others are sparingly excreted, or vanish immediately after their Appearance. Again, as to their active Qualities, they are either hot, or cold, or of a middle Temperament; and they have their Differences, also, with respect to the Times in which they appear; for some are observed in the Beginning of a Disease, some at its Height, and others at its Decline: And with regard to the Times of their Duration, some are continual, others are observed at Intervals; some *Sweats*, again, appear with Signs of Concoction; others with Signs of Crudity: Some are critical, and determine the Fate of the Patient; others symptomatical, as appearing only after the manner of Symptoms: And some are periodical; as those which are observed in Tertian and Quartan Fevers. And these are all the Differences of *Sweats* which we shall observe at present.

In treating of the Generation of *Sweats*, we are to consider the Matter of which they consist, and the efficient Cause of them. The Matter of *Sweat* and *Urine* is the same, as *Galen* says, *Lib. 10. Simpl. Cap. de Sudore*, and in sound Persons is the Liquid they receive by the Mouth, only more elaborate, as having passed through all the Ducts, from the internal Parts to the Skin. Hence it appears to be the thinner Part of the Aliment, which they call the serous Humour, or Ichor, but what has acquired somewhat of a bilious Substance; and by its Thinness is capable of being eliminated from the Body through the Pores of the Skin; as a thick Humour, by a like Reason, seems indisposed for the Generation of *Sweat*. Such, then, is the Matter of *Sweat* in healthy Persons; and hence it follows, that they who eat and drink plentifully, sweat copiously; as do, also, plethoric Bodies, which have wide Pores, and such as have a moist Liver and Spleen. Hence it is said, by *Hippocrates*, 4 *Aph. 41.* that copious nocturnal Sweats, without manifest Cause, indicate the Body to be too plentifully fed; if this be not the Case, you may be assured that the Body requires Evacuation. The Matter of *Sweat*, then, in healthy Persons, is either the thinner Part of the humid Aliment, as was said before; or a redundant Humour in the Body. In Valetudinarians, or sick Persons, it sometimes consists of Serosities generated from too humid an Aliment, as may be observed in those who have transgressed the Laws of Temperance; but most frequently from a Redundance of too thin Humours, as Blood, yellow Bile, and, also, from a cold pituitous Humour. Hence it is said by *Galen*, *Lib. 3. de Crisibus, Cap. 3.* that *Sweats* are proper to all Fevers, especially to burning Fevers; and that Semitertians, Quotidians, and Quartans, form their Crises by them; that they are a considerable Relief under excessive Heats, Inflammations, Parotides, Lethargies, and all other Cephalic Affections; and that all Humours, whether cold or hot, with a proper Degree of Thinness, may excite a *Sweat*, or discharge themselves in *Sweat*; but, most of all, putrid Humours find a Vent this way, as being the thinnest, and most fluid. Sometimes it happens, though only in malignant and dangerous Disorders, that the alimental Humidities of the solid Parts, which Physicians call the natural Humid, by which the natural Heat is maintained, being colligated and discussed, pass through the Pores of the Skin in the Form of *Sweat*.

The efficient Cause of *Sweat* is Heat, either natural or preternatural, existing in the Body; for it is Heat which attenuates the Humour, and conveys it to the Skin: For Bodies, when they are heated, fall into a *Sweat*. Hence it is that in continual Fevers, under that extraordinary Degree of Heat which succeeds a Rigor, there is usually an Eruption of *Sweat*: For while the Body is under a Rigor, the Heat retires to the inward Parts; but afterwards, if it be strong enough, breaks forth, and, diffusing itself through the Body, extenuates the Humours; and, being resolved almost into Vapours, conveys them, with itself, to the Skin, and there causes a *Sweat*. *Hippocrates*, in his Book of *Prognostics*, says, Some Sweats are occasioned by a Faintness or Feebleness of the Body; others by the Violence of an Inflammation. From the first Cause is produced not simply a *Sweat*, but a small Desudation, or rather a kind of dewy Moisture, which the *Greeks* call *εἰδρωσις* (*Ephidrosis*; see that Word) and the *Latins* *Desudatio*, over all the Body, as we are taught by *Galen* on the *Prorrhetica*; or only on the

Head and Thorax, and indicates the Imbecillity of the retentive Faculty, or the Redundance of Humours in the sweating Parts. Desudations (in the Sense before implied) are occasioned by the Violence of an Inflammation oppressing or resolving Nature; or because the thinner Part of the Humidities which are rarefied by the burning Heat, settles on the Skin: Wherefore *Sweat* is generated by Heat, changing into Vapour the thin Humour which is the Serum or Ichor of the Blood, proceeding from the Humidities of the Meat and Drink, or rarefying the Blood, Bile, or Phlegm, and raising them into Vapours. In Fevers, which the *Greeks* call *Ελodes*, and we *Sweating Fevers*, *Sweat* is a proper Symptom; for in this Case the suppressed Humour is, by the Violence of the Heat kindled in the inward Parts, resolved into a continual Exhalation and *Sweat*. But Desudations, which are, according to *Galen*, small *Sweats*, or Moistnesses, of no Signification or Benefit, affecting the whole Body, or rather the superior Parts, are to be ascribed to another Cause, as we observ'd, proceeding, as *Hippocrates* says, from a Faintness or Resolution of the Body, or the Violence of an Inflammation; or, according to *Galen*, from a Resolution of the retentive Faculty, occasioning a Desudation not only of the redundant excrementitious Humour, but of the alimentary Portion appropriated to the solid Parts. These Things premised, concerning the Nature and Causes of *Sweat*, we proceed to the Prognostics which may be formed from them.

Of good and salutary SWEATS, prognosticating Recovery.

It often fortunately happens, that Persons under acute Diseases are freed from them by a profuse and critical Eruption of *Sweat*; and with good Reason, since, as *Galen*, in *Lib. Art. Med.* observes, the whole Body is evacuated by sweating. *Sweats* of this beneficial Sort are distinguished from the contrary, by the following Properties or Characters.

First, These salutary *Sweats* appear when the Disease is concocted, and are attended with Signs of Concoction; as we are taught by *Galen*, *Lib. 1. de Crisibus, Cap. 7.* where he writes, that *Sweats* effecting a happy Crisis, happen not in the Beginning, but in the Increase, or at the Height of a Disease, when Nature has either made a perfect Concoction, or has done Part of her Work, and proceeds in the rest with Vigour and Success. This, then, is one considerable Character of a good *Sweat*, without which *Sweats* are so far from being serviceable, that they portend a long Disease, much Pain and Anxiety, Relapses, and either no Crisis at all, or a fatal one; according to the Observations of *Hippocrates*, 1 *Epid. Sect. 2.* *Sweats*, then, appearing after Concoction, are Signs of a speedy Crisis, and safe Recovery; but in a crude and unconcocted State, they signify either that the Disease will be converted into an Abscess of a bad Kind; or that the Crisis will be frustrated; or that the Disease will be very painful and lingering, or mortal; or else it forebushes a Relapse. A necessary Mark, then, of a salutary *Sweat* is, that it appear after Signs of Concoction.

Secondly, A good *Sweat* must make its Eruption on some critical Day. On this Subject we find *Hippocrates*, 4 *Aph. 36.* thus pronouncing: Good *Sweats* in Persons labouring under a Fever, he says, are those which appear on the third, fifth, seventh, ninth, eleventh, fourteenth, seventeenth, twenty-first, twenty-seventh, and thirty-fourth Days; for these *Sweats* are critical: But those which break out at other times, signify that the Disease will be painful and tedious, and the Patient subject to Relapses. *Galen*, in his Comment on this Place, says, that the fourth Day was either omitted by *Hippocrates* because there are several Diseases, of a very acute Nature, which have their Fits or Paroxysms on odd Days, and their Crises at the same time with their Fits; or that the fourth Day was omitted by the Negligence of some Transcriber: But, for our Part, we have often admired the divine *Hippocrates* on this Head, since we have rarely observed *Sweats* of a very good Kind appearing on the fourth Day.

A third Character of a good *Sweat* is, its succeeding some critical Rigor: For when Nature has succeeded in her Efforts to expel the thin and sharp Humours out of the Veins into the superficial Parts, it occasions a vehement Rigor from a Dispersion of the same Humours over the sensible Parts, and vellicating them, as we are taught by *Galen*, *Lib. de Rigor. Convuls. & Palpit.* together with a Refrigeration of the extreme Parts; the Consequence of which violent Rigor and Coldness, when Nature is strong and vigorous, is, the exciting an acute and high Fever, by the breaking forth of the Heat, which, also, attenuates and rarefies those Humours, and resolves them into a copious *Sweat*. As an Instance to this Purpose, *Hippocrates*, 1 *Epid. Sect. 2. Agr. 6.* observes a very good Kind of *Sweat* succeeding a Rigor in the Case of *Cleonæides*. He was seized, he says, with a Rigor, had a high Fever, and fell into a copious *Sweat*; the Consequence of which was, a perfect and salutary Crisis. This is further confirmed in the Case of the poor Woman in the Strand, *ibid. Agr. 13.* of whom he says, On the

the eleventh Day she had a new Fit of a Rigor, succeeded by a high Fever; on the fourteenth she fell into a Sweat, which proved critical, and removed the Fever. Another Instance we have in Charion, 3 Epid. Sect. 2. Agr. 5. who on the seventeenth Day had a new Fit of a Rigor; had a high Fever; fell into a Sweat; underwent a Crisis; and was freed from his Fever. It is on this Account that we are told by Hippocrates, 4 Aph. 58. that a Rigor coming upon a burning Fever causes a Solution of the Disorder; because, says Galen, such Rigors are succeeded by Sweats, or some other good Evacuations. A Sweat, then, following a Rigor, is a very good Sign; and therefore Galen, Lib. 3. de Crisibus, Cap. 3. says, that those who are seized with a Rigor sweat very well; and Com. 1. in Prorrhet. that Sweats succeeding a Rigor are good, if they appear with Signs of Concoction. And, as a further Confirmation, it is observed by Hippocrates, 1 Epid. Sect. 2. Stat. 3. that the greatest Part of those who lay sick (at that Season), were seized with a Rigor about the Time of the Crisis, and especially those who had not been affected with an Hemorrhage from the Nose; these latter had, besides, a Return of the Rigor with a Sweat.

A fourth Qualification of a good Sweat is, that it be copious, hot, and break forth from all Parts of the Body: These are Marks which shew the Firmness and Strength of the Faculty, in equally diffusing the Heat over all Parts of the Body, and resolving the superfluous Humours with equal Efficacy on every Side into a Sweat, which it were impossible for it to effect if it were either very weak, or were contending with a malignant Disease; in which Cases the Evacuations of that Kind would be unequal, in some Parts much in Quantity, in others little, or, perhaps, nothing. The best Kinds of Sweats, then, you see, are hot, copious, and universal; whereas those which appear only on the Head or Thorax, or on all Parts of the Body, but little in Quantity, or cold, are esteemed very bad and pernicious; as we shall shew hereafter. The Truth of this Observation is confirmed by Hippocrates, in many Instances in the Epidemics; particularly, 3 Epid. Sect. 3. Agr. 6. in the Case of Pericles, of whom he writes, "that on the fourth Day, about Noon, a hot and copious Sweat broke forth over all his Body, he had a Crisis, and was freed from his Fever without any Relapse." And *ibid.* Agr. 10. in Nicodemus, "who on the four-and-twentieth Day fell into a profuse and hot Sweat, which was universal, and proved critical, in the Removal of the Fever." And of the morose Woman, *ibid.* Agr. 11. we read, "that on the third Day, towards Night, there was a plentiful Effusion of hot Sweat throughout all Parts of the Body; she was freed from the Fever, and fell asleep." Once more it is related of the Virgin of Larissa, *ibid.* Agr. 12. "that after a Horror she fell into a hot and plentiful Sweat over all her Body, underwent a Crisis, and was freed from her Fever."

Fifthly, It is an additional Mark of a very good Sweat, that it be not only universal, copious, and hot, but discharges itself in Drops and Vapours. Lib. Prognost.

Lastly, A singular Mark and Character of the best and most salutary Sweat, given by Hippocrates, in the Book just quoted, is, that it effects an entire Solution of the Fever, or wholly frees the Patient from it. For this Reason, he always, in his Epidemics, gives it as a distinguishing Characteristic of a critical and most beneficial Sweat, that the Patient is, by means thereof, ἀπυρετός, "free from a Fever;" or ἀπυρεσία ἐξῆλθεν, "that he had a Crisis with the Removal of his Fever;" or ἰσχυρῶς ἀπυρετός, "his Fever went off with a Sweat." Those Sweats, also, according to Hippocrates, Prognost. justly deserve the Name of salutary, which, by their free and plentiful Effusion in all Parts of the Body, though they do not entirely remove the Fever, are, yet, the Cause that the Patient can more easily support himself under it; since they alleviate the Disease, and diminish the Symptoms. But these Sweats differ from those of the best Kind, in not effecting a perfect Crisis, though they are Prognostics of Recovery at a longer Distance of time. Sweats of this Kind were often observed by Hippocrates, particularly of him who lay ill in the Garden of Deales, 3 Epid. Sect. 1. Agr. 3. in whose Case it is related, "that on the seventeenth Day his extreme Parts were cold; they covered him with Clothes; he had a high Fever; sweated over all his Body; found some Relief, and had the freer Use of his Reason; but the Fever did not leave him, and he had a Thirst. On the twentieth Day he slept; had the perfect Use of his Reason; had an Eruption of Sweat; was without a Fever, or Thirst;" which, however, return'd upon him; and it was the fortieth Day, when, after frequent Evacuations of white pituitous Matters by Stool, he fell into a profuse and universal Sweat, and had a perfect Crisis.

Thus we have given you the Marks or Characters of the best Kinds of Sweat, and such as are critical, which you will find comprehended by Hippocrates, in his Book of Prognostics, in the following Words: "In all acute Diseases the best Sweats are

"such as happen on a critical Day, and entirely remove the Fever. They are good, also, which arise over all the Body, and render the Disease more tolerable to the Patient; but those which produce no such Effect, are of no Service." And good Sweats are not only known by these Marks in themselves, but by the Attendance of other good Signs, as a good Hemorrhage, or some other salutary Evacuation; and, also, as we said, by the Patient's finding himself in some measure relieved by them. Sweats of this happy Influence were observed by Hippocrates in many Instances, particularly Cleonæides, Maton, the sick Woman who lived in the Strand, and Melidia, recorded in the first of the Epidemics; and in the Patient who lay ill in the Garden of Deales; Charion, Pericles, the Virgin of Abdera, Anaxion, Nicodemus, the morose Woman, and the Virgin of Larissa; whose Cases you find related in 3 Epid. with many others: In whose Histories the intelligent Reader may find the forementioned Signs, and Matter to exercise his Judgment in forming such salutary Prognostics as will not fail to justify themselves by the Event.

Of bad and pernicious Sweats, which portend a fatal Event.

Hippocrates, in his Book of Prognostics, speaking of bad Sweats, makes Degrees of them; and tells us, that such Sweats are in a great measure bad, as neither remove the Fever, nor render it more tolerable to the Patient; that is, afford him not the least Relief, though proceeding from all Parts of the Body. A worse Sort than those are such as neither proceed from the whole Body, nor alleviate the Disease: Still more pernicious are Sweats which exasperate the Disease; but the worst, and most pernicious of all are cold Sweats, and such as arise only about the Head, Face, and Neck; for such Sweats, he says, in a high Fever, portend Death; in one of a milder Nature the long Continuance of the Disease. But we shall consider all the bad Kinds of Sweat distinctly, under some general Heads, for the sake of Accuracy, and that we may be the better enabled to form just Prognostics from them.

First, then, we shall take into Consideration such bad Kinds of Sweat as appear in a crude State of the Disease, and unattended with the least Signs of Concoction. Secondly, We shall treat of bad Sweats with regard to their Quantity; or as they are more or less copious. Thirdly, We shall consider them with respect to Heat and Coldness. Fourthly, with regard to the Parts of the Body whence they proceed. Fifthly, as they injure, or at least no way relieve the Sick. And, lastly, as they appear attended with other bad Signs.

In examining the first general Head, that we may have a clearer Notion of what it contains, we shall distinguish Sweat into periodical, critical, and symptomatical. We call that a periodical Sweat, which attends the Periods or Returns of intermittent Fevers; as Tertians, or Quartans. Such was the Sweat observed by Hippocrates, 7 Epid. T. 4. in the Case of Pythodorus. A critical Sweat, of which we have spoken before, is such as appears, in continual Fevers, on some critical Day; and either entirely removes the Fever, or diminishes it, and relieves the Patient: And the Effect of this Sweat we call a Crisis, either perfect or imperfect. The Characters of a critical Sweat, we have told you, are, its Appearance with manifest Signs of Concoction, on a critical Day, when Nature is strong and vigorous; that it is hot, copious, and universal, yet not diminishing the Strength; and removes, or much diminishes the Fever, with its Symptoms. To a critical Sweat is opposed a symptomatical one, which happens in manner of a Symptom, and is never of any Benefit, but generally attended with destructive Signs; and portends Death, or, at least, a long Continuance to the Disease, with many Relapses, and much Pain and Trouble. On all such Sweats we bestow the Appellation of symptomatical, as we do, also, on all other Excretions which happen when the Disease is crude, or when no Signs of Concoction appear. Wherefore all bad Sweats appear in a crude State of the Disease, when there is no manifest Sign of Concoction. For which Reason Hippocrates, 2 Epid. near the Beginning, makes the Sweats which appeared at the Beginning of an epidemic Fever, there described, to be Prognostics of a difficult and dangerous Crisis: And these Kinds of Sweats are the worse, if they appear only on the Head, Neck, Throat, or Thorax; and if they are cold, scanty, or cease immediately; or if they are copious, continued, or immoderate, they are worst of all. Secondly, we are to speak of bad Sweats, with respect to Quantity, as they are copious, or scanty, or none at all. Sweat is said to be much, and copious, when it breaks forth in a thick and profuse manner; when it is assiduous and continual; and when it is both assiduous and copious. Copious Sweats, according to Galen, Lib. 3. de Symp. Caus. are occasioned either by the Rareness of the Body, or the Thinness of the Matter evacuated. Sweat which flows for either of these Reasons, comes not forth in a pressing and profuse manner, but assiduously and constantly.

constantly. Much Sweating, therefore, in Fevers, if occasioned neither by the Thinness of the Matter, nor the Rareness of the Pores, (which sort of Sweat, according to *Galen*, in 4 *Aph.* 41. is never copious) always indicates a Redundance of Humours, as we are told by the same Author, in 4 *Aph.* 42. And hence, *Hippocrates*, in the first-mentioned *Aphorism*, says, that "Much Sweating from Sleep, without any manifest Cause, indicates too plentiful Feeding; but if it happens, though the Patient takes no Food, it shews that the Body wants Evacuation." Much Sweat, says *Galen*, signifies Plenty of Excrements: These Sweats, therefore, appearing in Fevers, and affecting nothing towards a Crisis, are constantly pernicious, for this very Reason, that they indicate a Redundance of Humours, which requires a long Time for Nature to digest and subdue; whence in acute Diseases, which extinguish Nature in a short time, they often portend Death. Hence *Hippocrates*, 4 *Aph.* 42. says, that "A constant Flux of much Sweat, if cold, indicates a severe Disease; if hot, a milder." Because, as *Galen* says in his Commentary, both of them are Signs of a Multitude of Humours, the cold Flux of cold Humours, which are the worst; and the hot of hot Humours, which are less dangerous than the other. These Sweats neither remove nor alleviate the Fever, and break forth when the Disease is crude; and therefore are, at best, Prognostics of a long Disease, subject to Relapses, and attended with much Pain and Trouble. The Author of 1 *Prorrh.* 58. calls those Sweats unserviceable in acute Fevers; and *Hippocrates*, 1 *Epid.* Sect. 2. speaking of an epidemic continual Fever, says, that the Patients sweated much; but were so far from being relieved, that they were rather injured by it.

Sweats not copious, but yet constant or perpetual, are, also, bad, and, for the most part, mortal; since they are occasioned, as *Galen* says, *Lib.* 3. *de Sympt. Caus.* Cap. 2. and *Com.* in 4 *Aph.* 41. either by the Rareness of the Pores, or Imbecillity from a Resolution of the Habit of the Body, as the Case is in a Syncope: These Sweats then, are all pernicious, as indicating a Languor of Nature; but the worst are those symptomatical Sweats which are copious as well as constant, since they indicate an extreme Weakness, as well as an extraordinary Redundance of Humours, in which Circumstance Death is unavoidable, as is confirmed from the Instances of *Erasinus*, 1 *Epid.* Sect. 3. *Ægr.* 8. and the phrenitic Patient, 3. *Epid.* Sect. 3. *Ægr.* 4. of the first of whom it is said, that He had a Fever with perpetual Sweating: And of the other, that He vomited much thin, virulent, and æruginous Matter; had a Fever, attended with an Horror, and a copious and continual Sweat over all his Body. Some read this Place not according to *Galen*, as above, but from other Copies, thus, He had a copious and continual Sweat, which affected his Head and Neck during the whole Day. And it is usual with Persons under a Lipothymy to sweat in their Head and Neck. But this is no Reason that we should not, with *Galen*, read δ' ὅλα τὰ σώματα, over all the Body; since every Physician knows, that Persons under a Phrensy, before their Death, fall into a Sweat, from an universal Resolution of the Parts: Hence we conclude, that copious Sweats, in acute Diseases, not being critical, are not only of no Benefit, but, for the most part, fatal, and, when attended with a Languor, or total Decay of Strength, are most certain Signs of approaching Death; and that constant Sweats, whether copious or not copious, are alike pernicious in acute Diseases.

Sweat, little in Quantity, is usually of the same pernicious Signification as when much. *Galen*, *Lib.* 3. *de Symptom. Caus.* Cap. 2. writes, that small Sweats are occasioned by the small Quantity, or gross and glutinous Quality, of the superfluous Humours, or the Straitness of the Pores, which are rendered narrower, either by Contraction or Obstruction. The cutaneous Passages are obstructed by thick and glutinous Juices, and closed up, or contracted from an Atrophy, Refrigeration, or Softness: These little Sweats, if they break forth on a critical Day, are an undoubted Indication, that Nature makes fruitless Efforts to expel the Humours; and that its Attempts are frustrated by their Thickness or Viscidity, or the Narrowness of the Passages. But where there is no Constriction of the Passages (as may be known, because the Skin is neither contracted by an Atrophy, nor much refrigerated, nor remarkably soft) and there are Signs of a Redundance of Humours, little Sweats indicate Plenty of gross and viscid Humours; and if the Strength, at the same time, be very much exhausted, are mortal; and so much the more, if they appear without Signs of Concoction; in which Case, all Excretions are symptomatical, and indicate a Redundance of Humours. Sweats of this Kind shew, that Nature had begun to expel the Humours through the Skin, and could eliminate no more than the thinnest Portion of them, which must prove insufficient for a Solution of the Disease. Under this Head may be reduced Sweats which cease immediately after their Eruption, and are con-

demned by *Galen*, *Com.* 1. in 1 *Prorrh.* Sweat, therefore, little in Quantity, is always bad.

But the worst and most fatal of all Sweats, is that thin scanty sort of Sweat which the *Greeks* call *Ephidrosis*, and the *Latins* *Defudatio*, or *Mador*, "A Defudation, or Moistness." This Kind of Sweat appears sometimes on all Parts of the Body, but generally about the Head, Neck, Throat, Breast, and sometimes about the Extremities. Of this Subject we find *Galen* discoursing, in his Comment on the *Prorrhetica*, where he says, "We meet with the Word *Ephidrosis* several times in this Book; but we are not certain whether the Author means by it, those Sweats which appear about the Head and Thorax, or those which break forth from all Parts of the Body, but in a weak and faint manner, and of no Benefit to the Patient." Both of these indeed are bad; but the worst of them is what appears only on the upper Parts: For since all *Defudation* demonstrates either a Plenitude in the sweating Parts, or an Imbecillity of the retentive Faculty, if either of these affects the Parts about the Head and Thorax, it is a worse Sign, than if it were in any other Region. Of the Judgment that is to be made of Sweats indicating a Redundance of Humours, we have said enough already; but we may conclude the other Sort to be, also, pernicious, since they proceed from an extreme Decay of Nature, which is too weak to retain the alimentary Humid of the solid Parts, dispersed by Oppression or Resolution. These *Defudations* are distinguished from those occasioned by a Multitude of Humours, in that they generally break forth about the Forehead, Neck, Breast, or extreme Parts, with a slight Moistness, not increasing, seldom hot, but generally coldish, with a very low Pulse, and other Signs indicating Nature to be in a very languid State. Of this Nature are the Sweats, which owe their Rise to immoderate Evacuations, concerning which we read, 1 *Prorrh.* 126. A slight Sweat with a Refrigeration, after an Hemorrhage from the Nose, is bad.

But is it not a bad Sign in some acute Disorders not to sweat at all? Yes, certainly, in all those which, as *Galen*, *Lib.* 3. *de Crisibus*, has taught us, are critically terminated by Sweats: Such are all continual, and especially burning Fevers, which form their Crises by Sweat, or some other laudable Evacuation; whence the Fever is either entirely removed, or much diminished, with its Symptoms, and the Case of the Patient altered much for the better. Without such an Evacuation we are not to trust to any Remission of the Disease, as *Galen*, in 3 *Epid.* advises, agreeably to that of *Hippocrates*, 2 *Aph.* 27. We are not to place our Dependence on Things which give Relief after an unaccountable manner. The Necessity of such Caution is exemplified in the Instances of *Hermocrates*, 3 *Epid.* Sect. 1. *Ægr.* 2. and the Virgin Daughter of *Euryanætes*, *ibid.* Sect. 2. *Ægr.* 6. Of the first it is said, On the fourteenth Day he was free from a Fever, did not sweat, slept, and was in his perfect Senses: His Urine was the same. About the seventeenth Day, the Disease returned, the Patient was very hot, and on the following Days he had an high Fever, his Urine was thin, and he was delirious. On the twentieth Day he had another Crisis, and was free from a Fever, but sweated not. Such deceitful Remissions of Diseases without Sweat, or any other laudable Evacuation, are distinguished from such as may be trusted by the subsequent Signs, which, in the latter, are very good, in the former bad; as appears in *Hermocrates*, from what followed after the Crisis. On the twentieth Day he had another Crisis, was free from a Fever, sweated not: He had all the Time hitherto an Aversion to Food; had the Use of his Reason, but not of his Speech; his Tongue was dried up, but without Thirst; and his Sleep was comatous. On the twenty-seventh he died. And thus you see, that not to sweat at all, in burning Fevers, is sometimes a Prognostic of a fatal Event.

We proceed to take into Consideration those Sweats which are cold, since they are often observed to be mortal in acute Distempers; but, first, we are to have a thorough Insight into the Generation and Causes of them, which will very much illustrate the Reasonableness of grounding Predictions upon them.

First, then, Cold Sweats, as they consist of a cold and crude Matter, demonstrate, in continual Fevers, a Redundance of crude Humours, as *Galen* shews, *Com.* in 4 *Aph.* 42. especially when there is a copious Eruption of them. These Sweats, according to *Galen's* Opinion, *Com.* in 4 *Aph.* 37. are generated when the Humours putrefy in the Vessels; and Nature, which moderates and rules the solid Parts, and is, according to *Hippocrates*, the natural Heat, is either wholly or nearly extinguished; the Matters evacuated are indeed cold to the Sense, though the Heat, proceeding from the Putrefaction, may, for all that, be very violent; for which Reason it is a very destructive Sign, as it shews, that the excessive Quantity of Humours in the animal Body is endued with so great a Coldness, as not to be heated by either the natural or febrile Heat. Cold Sweats, then, indicate a Redundance of very cold Humours, by which Nature is either

totally, or very nearly, extinguished. But when there happens to be kindled in the Vessels a most violent Heat, from the Putrefaction of the Humours, and the natural Heat retires to the inward Parts, there is a Refrigeration of the Extremities, with a very cold Humour, without considering their acting one upon another; but when there comes to be a mutual Acting and Resistance of the Humours, it is necessary, either that the cold Sweat should be heated, or the Heat soon extinguished by it. Agreeable to this is the Observation of *Galen*, in *Lib. 4. Aph. In Diseases not acute, but of a milder Nature, if the natural Heat, after maintaining itself a long Time, prevails not at last, it is extinguished, which happens much sooner in a violent Disorder from a speedy Resolution of the Strength.* Justly, therefore, is it said by *Hippocrates*, 4 *Aph. 37.* that Cold Sweats, in an acute Fever, prognosticate Death; in a milder one, the long Continuance of the Disease: Since, as *Galen*, in his Comment, says, if the Fever be of a gentler Kind, the Patient may recover, the Redundance of the Humours being concocted, and subdued by Length of Time. But an acute Fever is both a Cause, and a very pernicious Sign: As a Cause, it naturally effects a Resolution of Bodies; and as a Sign, it shews the Multitude of Humours, which are too intensely cold to be altered by the febrile Heat.

But perhaps you will ask, How it is possible for these Humours, which are cold, and, consequently, unfit for Motion, and much more under an extreme Weakness, and almost Extinction of Nature, to be conveyed to the Skin?

I answer, That the Humour being in some measure heated by the febrile Heat, though naturally unfit for Motion, is conveyed to the Skin, where the adventitious Heat it had received being resolved, it begins to cool again, and so turns out cold.

Cold Sweats, then, in acute Diseases, are always of fatal Signification, whether much or little in Quantity, howsoever they come forth; or whether they proceed from the whole Body; or from the Head, Neck, and Breast; or from the Extremities. Instances of this were observed by *Hippocrates*, in the first and third Books of the *Epidemics*, in *Philiscus*, the Wife of *Dromeades*, the Woman who lay ill in *Foro Mendacium*, and *Philistion*, who all died with cold Sweats upon them. And the most destructive of this kind is a petty thin cold Sweat, which comes out about the Head, or extreme Parts, as the Hands and Feet, because they indicate a near Extinction of the Faculty. Justly, therefore, was it said by *Hippocrates*, *Lib. Prognost.* that Cold Sweats are worst, and, in acute Diseases, indicate Death; in milder ones, a long Continuance of the Disorder. Cold Sweats, then, are bad in all Cases; agreeably to the Observations of *Hippocrates*, 3 *Epid. Sect. 3. Stat. Pest.* where, among other Symptoms peculiar to the reigning Fevers of that Season, were Cold unseasonable Sweats, which came forth in a plentiful manner, and held the Patient continually. The destructive Tendency of these Sweats is confirmed by other concomitant Signs; which, taken all together, and especially such as are subsequent, are necessarily pernicious. Of this kind were those observed by *Hippocrates*, in *Philiscus*, and the others just mentioned. Of *Philiscus*, 1 *Epid. Sect. 3. Aigr. 1.* it is said, "At the Close of the fifth Day he grew speechless, fell into a cold Sweat, and his extreme Parts were livid: On the sixth Day about Noon he died." It is farther remarked of this Patient, that "He was continually under a cold Sweat." The Wife of *Dromeades*, *ibid. Aigr. 11.* "On the sixth Day in the Morning had a new Fit of a Rigor, succeeded by a speedy Return of the Heat, and a Sweat all over her Body; her extreme Parts were cold; she was delirious; her Respiration was great and rare [*degr. See ANÆON*], and soon after she died in Convulsions, which began at the Head." And of the Woman who lay ill in *Foro Mendacium*, 3 *Epid. Sect. 2. Aigr. 12.* we read, that "On the seventh Day she was seized with a Return of a Rigor, succeeded by an high Fever, with an intense Thirst, and Jaunditions [*Βανσεωρ. See BLESTRISMUS*]: Towards Evening she fell into an universal cold Sweat, and her extreme Parts were cold." From these Instances, and what has been said, it abundantly appears, that cold Sweats in acute Diseases are destructive, and constantly portend Death; which may be predicted with the greater Certainty, if those Sweats make their Eruption on some critical Day, and are succeeded by some pernicious and mortal Sign.

Let this suffice concerning destructive cold Sweats; and let us now proceed to consider Sweats, with respect to the Partiality, and the Parts of the Body whence they break forth. For Sweats, as we have said, are very good and salutary, when they make their Eruption from all Parts of the Body, because they demonstrate Nature to be robust, and under no inward Impediment, from a malignant Disorder, or any morbid Cause, which might frustrate her Efforts in making Excretions of the Humours from all Parts. But, on the contrary, when any one of the internal Viscera is seized with a

violent Inflammation, or oppressed with a Multitude of Humours, there arises a partial and unequal Sweat. Such Sweats, therefore, as make their Eruption not from the whole Body, but from the Head or Thorax, are, according to *Hippocrates*, *Prognost.* of the worst Kind; and, whether they be hot or cold, in acute Diseases portend Death; in milder Disorders, a long Continuance, Relapses, and much Pain and Sickness. *Hippocrates*, 1 *Epid. Sect. 1. Stat. 1.* speaking of epidemic, and very mortal kind of Fevers, says, that the Patients "were under a perpetual Sweat, but not in all Parts of the Body." And a little after, enumerating the Symptoms by which burning Fevers were known to be mortal, even at the Beginning, says, that "The Patients sweated a little about the Forehead and Clavicles; but not one of them in all Parts of the Body." Hence the Author of 1 *Prorrh. 39.* had Reason to say, that "Sweats, and especially about the Head, with a kind of Uneasiness [*ἰσοδύσφορος*], in acute Diseases, are a bad Sign." All Sweats, therefore, which proceed not from the whole Body, are bad, as being Prognostics of Death, or a long Sickness. Justly, therefore, has *Hippocrates* said, *Lib. Prognost.* that "The worst Kind of Sweats are those which are cold; and especially when they happen only about the Head, Neck, and Face: For such Sweats, in acute Fevers, portend Death; in less violent Distempers, their long Continuance." And very right is the Judgment which *Galen* on the *Prorrhetica*, passes on them, when he says, "Every Desudation, that is, Sweat breaking forth about the Forehead, the fore or hinder Part of the Neck, or Clavicles, indicates an Imbecillity of the retentive Faculty, or a Redundance of Humours." And, in another Passage of the same Comment, he tells us, that "Such Sweats are not good, both because they arise on the superior Parts, and, also, for a double Reason, which is, that they proceed from a Langour of the Faculty, or an Oppression of the same in its Original." Sweats arising in the Head and upper Parts, are very bad, particularly in a Suppuration and Phthisis, of which the Author of the *Coac. 402.* says, "They who are affected with a Suppuration, especially from a Pleurisy or Peripneumony, have their Disorder attended with Heats, which are but slight in the Day, but more intense at Night; they, also, spit forth something not worth Notice, sweat about the Neck and Clavicles, have hollow Eyes, and red Cheeks." With good Reason, therefore, are such Sweats esteemed mortal in an acute Fever, as indicating an Extinction of the Faculty, before it can accomplish the Concoction of the Humours; and when they are occasioned through an Imbecillity of the retentive Faculty, being unable to retain the Humour, or even the alimentary Juice proper to the Solids, portend, in a Fever, not only unavoidable but speedy Death, and with the greater Degree of Certainty, if they are, also, cold; of which Nature were those observed in *Pythion*, and the Woman in *Foro Mendacium*, 3 *Epid.* before-mentioned; and in *Meion*, *Aristocrates*, and *Pherecydes*, 7 *Epid. T. 47. 57. 91.* and in many others, who all died. But if the Disease be more favourable, and the Strength extraordinary, such Sweats indicate not Death, but the long Continuance of the Distemper; as it was in the Case of the Patient who lay ill in the Garden of *Dealcus*, 3 *Epid. Sect. 2. Aigr. 3.* of whom *Hippocrates* says, that "On the fourth Day there flowed from his Left Nostril a small Quantity of pure Blood; he had a Sweat about the Head and Clavicles, a Tumor of the Spleen, and a Pain in the Thigh on the same Side."

Sweats are, also, known to be bad, from their being unattended with any other Evacuation; and more from the Injury the Patients experience from them. For when a Sweat is found to be so far from being beneficial that it proves of ill Consequence to the Sick, it is to be esteemed one of those pseudo-critical Signs which determine nothing, and, consequently, according to *Galen*, *Com. in Prorrh.* are mortal. *Hippocrates*, in his Book of *Prognostics*, pronounces such Sweats as neither remove the Fever, nor render the Disease more tolerable to the Patient, to be useless and bad, and Prognostics either of Death, or a long Sickness. And the Author of the *Prorrh.* 58. says, that "Much Sweating, in acute or high Fevers, is of no Service to the Patient," as not removing the Fever. And, *ibid. 7.* "Burning Heats in the Hypochondrium, remaining after a Refrigeration of the Fever, are a bad Sign; and especially when attended with Sweats." Because, as *Galen* says, in his Comment, they extend not over the whole Body; but are small and inconsiderable, and incapable of extinguishing the flammeous Heat in the Hypochondrium. Again, 1 *Prorrh.* 68. it is said, that "They who lie waking in a Sweat, and have a Return of the Fever [*ἀναδύσαντες πυρετός*], are in a bad State." And, *ibid. 67.* "A fiery red Face, and Sweating, in a burning Rigor, are bad;" because, if the Sweat were good, the Heat of the Face would be resolved by it, which the Sweat not doing, indicates a Malignity. To the

the same Purpose, but more express, is 4 *Aph.* 56. "If a Person under a Fever fall into a Sweat, and finds no Remission of his Fever from the same, it is a bad Sign; for the Disease is prolonged, and a Redundance of Humidities is indicated." Such Sweats, in an acute Fever, portend Death; in a more gentle one, a long Continuance.

Among bad Sweats are, also, to be reckoned, all those which precede, accompany, or follow, other pernicious Signs. From such Sweats as these we may prognosticate a fatal End; since, if succeeded by bad Signs, they prove themselves of the Number of those critical undetermining Signs, by which the Patient is so far from being relieved, that he finds himself worse; and, consequently, are to be esteemed mortal. Of pernicious Signs succeeding bad Sweats we find *Hippocrates* speaking, 1 *Epid. Sect. 1.* where he says of some Patients under an epidemic Fever, that "They had continual Sweats, but not diffused over the whole Body, and their extreme Parts were refrigerated, so as to become almost incapable of recovering Heat." And the Author of the 1 *Prorrhetica* 126. says, that "An Hæmorrhage from the Nose, with thin cold Sweats, and a general Refrigeration, indicate Malignity, and are bad for the Patient." And, *ibid.* 102. "They who in the Beginning (of acute Diseases) are affected with cold Sweats, make concocted Urine, and are in a burning Heat, then unaccountably [*ἀκρίτως*] refrigerated, till a sudden Return of the hot Fit, and moreover labour under a Torpor, Coma, and Convulsions, are in a very dangerous State." Once more, *Coac.* 40. "Refrigerations, with thin cold Sweats, succeeding a Rigor [for *πρὶν* I read, with *Prosper Alpinus*, *πρὶν*], are bad." Of this Nature were the Sweats observed by *Hippocrates*, in the Wife of *Dromades*, 1 *Epid.* the Virgin Daughter of *Euryanactes*, and the young Woman who lay ill in *Foro Mendacium*, 3 *Epid.* and in the Wife of *Theodorus*, *Aristocrates*, and the Wife of *Euxenus*, 7 *Epid.* T. 27. 52. 58. who all died. Of the Wife of *Dromades* we have taken Notice above; and of the Daughter of *Euryanactes* it is said, that "On the seventh Day after a Crisis she was seized with a Rigor, was feverish, and sweated: The eighth Day after the Crisis she had something of a Rigor; and afterwards her extreme Parts became cold, and always so continued. About the tenth Day, after a Sweat which she had, she was delirious; but soon recovered her Senses." Of the young Woman who lay ill in *Foro Mendacium*, we read, that "On the second Day all the Symptoms were exasperated; she had frequent and unseasonable Stools, had no Sleep, was disturbed in her Reason, and sweated a little. On the third Day she was very uneasy, thirsty, nauseating, very restless and impatient, delirious, and her extreme Parts were cold and livid." The Wife of *Theodorus* "had first a small Eruption of Sweat about the Forehead, which, after a considerable Time, diffused itself over the whole Body and Feet, after which the Fever seemed to remit. The Body of the Arteries seemed cold to the Touch; but those at the Temples had more than an ordinary Degree of Pulsation: Her Breath grew short; she was delirious at every Turn, and she became worse on all Accounts." The Wife of *Euxenus*, "Had a Remission of her Fever, with a copious Sweat; was much refrigerated; laboured under an Asthma of various Kinds," and so died. By these, and other Instances which might be given, it appears, that all Sweats which are succeeded by pernicious Signs, have a destructive Tendency.

Sweats are, also, pernicious, when attended with bad Signs and Symptoms; and this is confirmed by *Coac.* 10. where it is said, that "They who are molested with frequent thin or cold Sweats and Rigors by Turns, are in a very dangerous Way." And, *ibid.* 13. "They who labour under frequent Returns of Horrors and Sweats, are in a very dubious State." Again, *ibid.* 53. "Sweats with a kind of Uneasiness, in acute Diseases, are bad." And, *ibid.* 327. compared with 1 *Prorrhet.* 127. "An Hæmorrhage at the Nose, on the contrary Side is bad; as, for Instance, if it proceed from the Right Nostril, in a Tumor of the Spleen; but it is worse if attended with a Sweat." And, *ibid.* 35. compared with 1 *Prorrhet.* 74. "Fever, attended with a Coma, Lassitude, Dimness of Sight, Want of Sleep, and Sweats, are malignant." Such were the bad Symptoms attending the Sweats under which *Aristocrates* laboured, 7 *Epid.* T. 52.

The same Judgment is to be made of Sweats succeeding very bad Signs or Symptoms. Thus, 1 *Prorrhet.* 126. "A small Sweat, with a general Refrigeration succeeding an Hæmorrhage at the Nose, is malignant and pernicious." And we may say the same of it, when succeeding any bad Evacuation in general, whether it be an immoderate Hæmorrhage, or Distillation of Blood by Drops from the Nose, in burning Fevers, or a bad Flux of the Belly, or Vomiting. Sweat therefore, consequent upon bad Signs, is very pernicious, and especially if it neither removes nor alleviates those bad Symptoms.

Thus it was in the Case of the Wife of *Olympiades*, 7 *Epid.* T. 49. of whom we read, that "Her Speech was not restored, nor was she any way relieved; that her Eyes were cast down, her Respiration was sublime [*πρὸς μὲν*]. See *PNEUM.* MA], and performed through the Nose; she had an ill Colour, and, when she was near Death, had a Sweat about her Feet and Legs." *Prosper Alpinus*, de *Præfug. Vit. & Mort. Egrotorum.*

A FEBRILE DIARRHOEA.

The Matter of a Diarrhœa is the Mucus, Lymph, Gluten, Pus, Sanies, or Blood, from the Nose, Mouth, Fauces, Oesophagus, Stomach, Liver, Gall-bladder, Pancreas, Intestines, and Mesentery: It arises from too great an expulsive Force of these Substances into the Intestines, and a Weakness of the contracting Force of the Intestines; or from some Obstruction of the absorbing Vessels of the Intestines, which prevents the Admission of what ought to pass through them.

Hence it appears, that Fluxes of the Belly in Fevers are of various Kinds, with respect to the Matter, Cause, Effect, and Event; they are, therefore, sometimes utterly incurable; and sometimes colliquative, in which Case they seldom admit of a Remedy.

If a *Diarrhœa* perseveres long, it disposes the abdominal Viscera more and more to the same Disorder; weakens them, excoriates, and inflames them; empties and exhausts the other Vessels and Viscera: Hence arise an Atrophy, Emaciation, Weakness, a Dysentery, an Inspissation of the Fluids throughout the whole Habit of the Body; a Laxity of the Solids; a Loss of the Fluids; a *Leucophlegmatia*; Dropsy; and Tabes.

The Cure is performed by destroying the Acrimony which irritates the Intestines, and by expelling it by means of Emetics, Purges, and Clysters; by corroborating the relaxed Parts; by mitigating the Violence of the Diarrhœa with Narcotics; by determining the morbose Matter to some other Excretion, as those by Sweat and Urine; by diminishing the Cause, and correcting it at the original Fountain.

For an Account of Prognostics from Stools, see the Article *DEJECTIO.*

FEBRILE ERUPTIONS.

The Matter of inflammatory Pustules is, generally, something which cannot pass the cutaneous Vessels, but sticks therein; and they are excited by the Force of the circulatory, secretory, and excretory vital Powers: Hence Eruptions are various, according to the Variety of Causes which produce them; and on this account Fevers acquire different Appellations, from the different Eruptions with which they are attended, as *Erysipelatous*, *Scarlet*, *red Petechial*, *purple Petechial*, *Morbillose*, and *Variolose*.

It is customary to treat of the last three separately; as for the three first, the Diagnostics, and Prognostics are easily found.

The Cure is not difficult; for it only requires, that the eruptive Matter be kept in a moveable State, by the Exhibition of a sufficient Quantity of light Fluids, and preserving a due Moderation of the vital Powers; for by this means they soon come to a Period, with a Desquamation of the Cuticle.

The other febrile Symptoms, which are similar to these, and of the like kind, require the same Treatment as the Diseases on which they depend.

Hence we learn, what Judgment is to be formed of the Variety of acute Fevers; for those in which the febrile Motion, when once began, is continued equably to the End, are called *Continual Fevers*; those in which the febrile Force remits, and is again exasperated alternately, in such a manner, however, that the Fever never ceases, are called *Continual Remittent Fevers*; those, lastly, which remit so entirely, that the Patient is absolutely free from a Fever in the Intervals betwixt the Paroxysms, are called *Intermittents*.

A CONTINUAL FEVER.

The most simple of continual Fevers, is an *Ephmera*, or Diary Fever, which goes through the different Stages, as the Beginning, Increase, State, and Declension, in the Space of twenty-four Hours. It arises from a more vehement Motion only, excited by some Error with respect to the Non-naturals; and has scarcely any material Cause. It is distinguished by the Slightness of the Cause; the Purity of the Body; the Mildness of the Symptoms; the expeditious Crisis; and a Restoration of the Pulse to its natural State, immediately upon the Cessation of the Fever. The Cure is easily performed, by Abstinence, Rest, and Diluting.

If this Species of Fever continues many Days, it is called *A continual but not putrid Fever*. The Causes, Signs, and Cure are the same with those of the *Ephmera*; but it requires particularly copious Bleeding, and refrigerating Medicines.

P Y R

A CONTINUAL PUTRID FEVER.

That Species of Fever, which is called a *putrid Synochus*, arises from Causes somewhat greater than a simple Inflammation; an Obstruction of the Viscera; an Oppilation of the Skin, and almost all the Capillaries; and a considerable Degree of Acrimony.

It is known by a Degree of Heat which is pungent to the Touch; a febrile, but unequal and irregular Pulse; Urine which is thick, red, and turbid, without a regular Sediment; and by an hot and sanguineous Temperament, Age, and Habit of the Patient.

This Fever is distinguished by the Name *Homotonos*, when it preserves the same Tenor through all its Stages, neither increasing, nor diminishing: When it perpetually increases, it is called *Epacmaistica*, or *Anabatica*: But when it continues perpetually to decline, it acquires the Title of *Paracmaistica*.

Of these the first Species is esteemed salutary; the second the worst; and the third better.

This Fever is esteemed the more dangerous and fatal, in proportion as the Pulse is more weak, frequent, unequal with respect to Strength, inordinate with respect to Time, and intermittent; as the Respiration is more difficult, frequent, and laborious; the more the *Pinnæ* of the Nostrils are agitated; the more Pain it excites about the vital Parts; and the more inordinate it is; the more vehemently a Sensation of Lassitude and Weakness, is perceived; the more frequently the Patient changes his Posture of lying, tosses about, and lies on his Back, with his Limbs extended; the more the rational Faculties, and Affections, are injured; the more the Appetite is impaired, the Digestion difficult, the Urine red, thick, and turbid, or pale, watery, discharged in small Quantities, and difficultly retained; the more tremulous Motions are perceived in the Patient; the more he starts from the Touch; the more he trifles and fumbles with his Hands; and the more he picks the Naps of the Bed-cloaths; the more ghastly his Eyes appear, and the more moist they are with involuntary Tears; for these are all very bad Symptoms.

But when Sleep is laborious and difficult, and affords no Relief; when purple or livid Eruptions appear on the Body; when the Hypochondria are tense and inflated, the Patient generally dies.

The Cure delivered above, is to be varied according to the Variety of Indications, the Violence of the Symptoms, the Condition of the Patient, and the Stage of the Fever; and, therefore, does not require to be particularly treated of.

The Antients called these Fevers *ῥόχοι*, and the Schools, *Continentes*; because in them there is no Remission of Heat: But Continual Remittent Fevers, the Antients called *ῥεχέει*, in Latin *Continuæ*.

A CAUSUS, OR ARDENT FEVER.

Among these Fevers, we may justly reckon the *Causus*, or burning Fever, on account of its Frequency, Danger, and Difficulty of Cure.

The primary Symptoms of this Disorder, are an Heat almost burning to the Touch, unequal in different Parts of the Body, most intense in the vital Parts, (but more mild towards the Extremities which are some times cold) and rendering the Breath intensely hot, a Dryness in the whole Skin, Nostrils, Mouths, and Tongue; a dense, difficult, and quick Respiration; a dry, yellow, black, parched, and rough Tongue; an insatiable Thirst often suddenly removed; a Loathing of the Aliments, a Nausea and Vomiting; the greatest Anxiety, Inquietude, and Weariness; a gentle Cough, and a shrill Voice; a Delirium, Phrenitis, obstinate Watching, Coma, and Convulsions, and Exacerbations on the odd Days.

The Causes of a burning Fever may be excessive Labour; long Journeys; the Heat of the Sun; Thirst long endured; the Use of heating, fermented, aromatic, and acrid Substances; excessive Venery; and immoderate Weariness, especially in the Summer.

This is the Progress of this Disease: On the third and fourth Day it often proves mortal; and, if it is violent, rarely exceeds the seventh, without putting an End to the Patient's Life. It is frequently terminated by an Hemorrhage, (which, if it is sparing on the third or fourth Day, is a mortal Sign) which may be predicted by the Pain of the Neck, the Heaviness of the Temples, a Diffension of the Præcordia without a Sense of Pain, a spontaneous Discharge of Tears without any other mortal Sign, a Redness of the Face, an Itching of the Nostrils; and this Hemorrhage is most salutary on the critical Day. This Species of Fever is, also, terminated on the critical Day, by Vomit, Stool, Sweat, Urine, and the Expectoration of a thick Matter: If the Exacerbation of the Fit happens before the sixth Day, it is a very bad Symptom; black and thin Urine, discharged in a small Quantity, is, in this Disorder, a mor-

P Y R

tal Sign; as, also, a Spitting of Blood, and a Discharge of bloody Urine; an injured Deglutition is a bad Sign; and a Refrigeration of the Extremities, among the worst of Symptoms; a Redness and Sweating of the Face is, also, a bad Sign; and an Inflammation of the Parotid Glands, which does not come to Suppuration, proves mortal; an excessive Flux is, in this Disorder, also, mortal: This Species of Disorder, when accompanied with a Tremor, terminates in a Delirium, and then in Death; it, also, terminates in a Peripneumony, often accompanied with a Delirium: That Species of burning Fever, which arises after violent Gripes of the Belly, is of the worst Kind; it is critically terminated by a Rigor.

From these Signs the Disorder is easily known to be present, nor can its proximate Cause be mistaken; for it arises from the Blood's being deprived of its milder and more liquid Parts by an Inflammation through the Whole of the Body, whilst the Strength of the Patient is vigorous. Hence, also, sure Prognostics may be made with respect to the Termination of this Species of Fever.

The Cure of a burning Fever requires a pure cold Air frequently renewed; Cloaths, which by no means suffocate or burden the Patient; a frequent erect Posture of the Body; large Quantities of mild, demulcent, subacid, aqueous, and warm Liquors used as Drink; light farinacious Foods prepared of Barley, Oats, and subacid Fruits; Venesection, if the Disease is in the Beginning, if the Marks of a Plethora appear, if there are Signs of a considerable Inflammation, if the Heat is intolerable, the Rarefaction of the Fluids excessive, a Revulsion necessary, and the Symptoms so violent, that they cannot be easily removed by any other Remedy; the Injection of mild, diluting, laxative, antiphlogistic, and refrigerating Clysters to be repeated as the treat, Costiveness, and Revulsion require; Humectation of the whole Body, by drawing into the Nostrils a mild Air, impregnated with the Steam of warm Water, by washing the Mouth and Throat, by bathing the Hands and Feet with tepid Water, and by fomenting, with warm Sponges, the Places where most Vessels are exposed to the Touch; aqueous, mild, nitrous, gratefully acid, and gently laxative Substances; together with such as supply the Matter of the Urine, and without any Acrimony, by their Quantity, afford a Vehicle for the Sweat; such as remove Contractions of the Fibres, resolve and dilute the Thickness of the Humours, and, at the same time, correct their Acrimony.

To these if we add what has been said in the general Rules relating to the Cure of acute Disorders, and their Symptoms, and the Doctrine of each particular acute Disease, arising from the Affection of each of the Viscera, to be found under their respective Articles, he shall clearly understand what Remedies are proper for the Cure of any burning Fever.

Besides, from what has been said, all other particular acute Fevers may be understood, since they may either be referred to particular Symptoms, or are the Effects of some other Disorder. See CAUSUS.

INTERMITTENT FEVERS.

We have already given the Definition of an intermittent Fever, the Diagnostics of which are obvious, and its Distinction into various Classes easy, since these depend only on the Difference of Time.

But 'tis to be observed, that intermittent Fevers, in general, are either vernal, and rage from *February* till *August*; or autumnal, and rage from *August* till *February*; which Distinction is necessary on account of the various Conditions, Symptoms, Terminations, Durations, and Cures of different Intermittents: Besides, one Intermittent Fever sometimes removes another.

Intermittent Fevers, in the Beginning of the Autumn, often resemble those of the continual Kind, on account of their longer and redoubled Paroxysms, whereas their Nature and Cure are widely different.

Fevers of this Kind begin with an Oscitation, Pandiculation, Weariness, Weakness, Cold, Horror, Rigor, Tremor, and Paleness of the Extremities, a difficult Respiration, an Anxiety, a Nausea, a Vomiting, and a quick, weak, and slow Pulse. The more violent and numerous these Symptoms are, the worse the Fever is; and afterwards the Heat, and other Symptoms, are the worse. This is the first Stage of intermittent Fevers, which correspond to the Increase of continual Fevers, and is of all the other Stages the most dangerous; for, in this Condition, the Urine is generally crude and thin.

This Stage of intermittent Fevers is succeeded by another, which begins with Heat, Redness, a strong, large, and free Respiration, a small Anxiety, a large and strong Pulse, an excessive Thirst, and a Pain of the Limbs and Head, and generally a Redness of the Urine: This Stage corresponds to the State or Height of continual Fevers.

Then,

P Y R

Then, last of all, there generally appears a profuse Sweat, a Remission of all the Symptoms, a thick Urine, with a Sediment resembling Brick-dust, Sleep, a total Absence of the Fever, Lassitude, and Weakness.

Intermittent Fevers frequently terminate in those of the acute and dangerous Kind, which is generally owing to an excessive Heat, and too brisk a Motion of the Fluids.

Intermittent Fevers, running through their three different Stages, greatly injure the minute Fibres of the Vessels and Viscera, by producing Stagnations, Obstructions, Coagulations, Impulsions, Resolutions, and Attenuations of the Fluids: Hence the Vessels are weakened, and the Fluids become morbid, especially in that Species of the Disease, in which their Parts are less assimilated, and not duly mixed, by which Circumstances in Conjunction, an acrimonious State of the Juices is produced. Hence all these things concurring produce an easy Propensity to sweat, which greatly weakens the Patient, since, sometimes, the viscid Part of the Blood transpires. In this Situation of the Patient, the Urine is surprisngly thick, turbid, pinguious, like that of Horses, or like Saliva. Hence the weak, resolved, and hardly coherent Blood, being deprived of its best Parts, is at once acrid and thick; so that, in consequence of the Laxity of the Vessels, and the Acrimony of the Humours, those long-continued Fevers sometimes terminate in chronical Disorders, such as a Scurvy, a Dropsy, a Leucophlegmatia, scirrhus Tumors of the Abdomen, and the several Misfortunes produced by these.

But if intermittent Fevers are not of the malignant Kind, they dispose the Patient to Longevity, and cleanse the Body from inveterate Disorders.

Hence, after an accurate Examination of the whole History of Intermittents, their proximate Cause seems to be a Viscidity of the arterial Blood upon the Accession of any Cause which produces a brisk and strong Contraction of the Heart, and a Resolution of the stagnant Fluids.

Since, therefore, this Order is always observed in Intermittents, the Physician who can surmount the first Time, and the first Cause, may by that means remove the whole ensuing Paroxysm.

Besides, as an infinite Number of Causes, and these not very considerable, may produce the first Stage of a perfectly intermittent Fever, and its Cause; and as many such Causes may be produced, increased, and fomented, in all the Fluids, formed and secreted in the human Body, it is more difficult to distinguish the Cause already formed from infinite possible Circumstances, than to invent one possible Cause, sufficient from the Laws of the animal Economy to account for the stated Periods of Intermittents. This is sufficiently obvious to every accurate Inquirer.

The Cure, therefore, requires that we should use aperient, saline, alkaline, aromatic, mineral, diluting, mild, and oleous Substances, Heat, Motion, Fomentation, and Friction, during the Intermision, or in the first Stage. The Medicines of this Kind are all *Tachenius's* Salts of Herbs, the most considerable of which, are obtained from Wormwood, *Carduus Benedictus*, and Stalks of Beans; Nitre; antimoniated Nitre; diaphoretic Antimony unwashed; Sal Ammoniac; Sal Prunellæ; and Sal Polychrestus; Tartarus regeneratus; Tartarus Tartarificus; Salt of Tartar reduced to a saponaceous Mass with Oil of Turpentine; and all the Parts of all the aromatic Herbs, especially of those which are resolvent.

In order to purge the *Primæ Viæ* from the redundant Sordes, a Purge, or a Vomit, are often very beneficial, exhibiting either so long before the Paroxysm, that its Operation may be over before the Fit comes on. That this Method is to be taken, may be known from the Patient's way of living, preceding Diseases and Symptoms, a Nausea, a Vomiting, Eructations, Tumors, the Breath, the Sordes of the Tongue, Throat, and Palate, want of Appetite, Bitterness of the Mouth, and a Vertigo accompanied with Dimness of Sight; and, after the Operation, the tumultuous Commotion of the Fluids is to be allayed by an Opiate before the Paroxysm. Thus,

Take of emetic Tartar, five Grains, reduced to a Powder; to be taken at one Dose: Or,

Take of emetic Tartar, five Grains; and of the Crumbs of Bread, a sufficient Quantity; to make five Pills, to be taken for one Dose: Or,

Take of emetic Wine, two Ounces; and of Oxy-mel of Squills, six Drams: Mix up for a Draught: Or,

Take of emetic Tartar, five Grains; Rob of Currans, half an Ounce; and Oil of Cinnamon, one Drop: Make into a Bolus.

Forms of Purges, are these following:

Take of the Pulvis Cornachini, two Scruples for a Dose: Or,

P Y R

Take of the *Pilulæ Cochlear majores*, two Scruples; of *laxative Syrup of Roses*, half an Ounce; and of distilled Elder-flowers, two Ounces: Mix for a Draught: Or,

Take of washed Aloes, twelve Grains; of Myrrh, ten Grains; of *Opopanax*, five Grains; and of *Sal Gemmæ*, five Grains: Mix, and make up into nine Pills.

These are beneficial, when, by their Stimulus, they operate both Ways.

But they prove injurious when they weaken, evacuate the most liquid Parts of the Juices, and disturb the necessary Digestions; and thus either protract the Disease, or bring on Death. The cold and hot Fits are often removed by Sudorifics, whilst a few Hours before the known time of the Paroxysm, after filling the Patient's Body with an aperient, diluting, and gently narcotic Liquor, an Hour before the Paroxysm, a Sweat is excited, and continued till two Hours after the Paroxysm usually began.

Take of Sal Polychrestum, two Drams; of the Syrup of the five aperient Roots, two Ounces; of pure Opium, two Grains; of the distilled fermented Waters of *Carduus Benedictus*, Wormwood, Rue, Marjoram, and Mint, each one Ounce; and of the Extract of Wormwood, two Ounces: Mix all together, and let the Patient take one Spoonful every Quarter of an Hour, drinking after each, four Ounces of the following Decoction:

Take of the Root of Masterwort, six Drams; of the Roots of *Sassafras*, and red Saunders, each two Ounces; of the Leaves of Golden-rod, two Handfuls; of the Leaves of the Lesser Centaury, half an Ounce; and of the bruised Seeds of Candy Carrot, six Drams: Infuse for two Hours in a close-stopt Vessel, without boiling, though very hot; then let them boil a little, and exhibit two Pints of the Decoction for a Dose.

Venesection, considered in itself, is always pernicious, though it may prove accidentally beneficial, as, also, a light and exactly regulated Diet.

When intermittent Fevers are in the second Stage, aqueous Substances actually warm, mixed with subacid aperients, nitrous Ingredients, or Preparations of Succory, and other mild Substances of a similar Nature, are indicated, whilst the Patient is to be kept in a State of Rest, and moderate Warmth. The Medicines before recommended in a febrile Anxiety and Thirst are to be used in this Stage of Intermittents.

When the Paroxysm is terminated by a Crisis, then it is expedient to supply the Matter of Sweat and Urine, by vinous Potions, Broths prepared with Flesh, and temperate Decoctions: Thus those two Excretions are to be excited, not by the Force of Heat, Medicines, or Bed-cloaths; but gently promoted by an increased Quantity of their Materials long persisted in.

Violent Symptoms are to be removed by the Rules laid down for the Cure of febrile Symptoms in general.

When the Fever is removed, the Patient is to have his Strength restored by analeptic Aliments, and corroborating Medicines; then after his Strength is increased, he is to be purged several times.

But if an autumnal intermittent Fever is very violent; if the Patient is weakened by the Disease; if the Disorder is of a considerable Standing; if there are no Signs of an internal Inflammation, nor of Pus collected any-where, nor of a considerable Obstruction of any of the Viscera, the Disorder is to be removed by the *Peruvian Bark*, exhibited in the Form of a Powder, an Infusion, an Extract, a Decoction, or a Syrup, with proper Specifics, during the Intermision, in a due Order, a proper Dose, and in Conjunction with a proper Regimen. For this Purpose,

Take of the *Peruvian Bark*, one Ounce; reduce to a Powder, to be divided into twelve Doses; one of which is to be taken by the Patient every Hour in Wine: Or,

Take of *Peruvian Bark*, three Ounces; and common Water, twelve Ounces: Infuse for two Hours; then boil for an Hour; and add four Ounces of *French Wine*; then let the Whole boil a little longer in a tall Vessel; and of this Decoction, when pure, let the Patient take one Ounce and an half every two Hours: Or,

Take of the *Peruvian Bark*, three Ounces; boil for two Hours in a close Vessel in common Water to sixteen Ounces of strained Liquor, of which let the Patient take an Ounce and half every two Hours: Or,

P Y R

Inspissate the preceding Decoction to the Consistence of Honey, and divide into four Doses, one of which is to be taken every two Hours : Or,

Take the preceding Extract, dilute in one Ounce of the Syrup of the Five aperient Roots : Make a Syrup to be used in the same manner with the Extract : Or,

Take the preceding Extract ; mix with it a sufficient Quantity of the Powder of Liquorice, and reduce to a Mass of Pills, of which the Patient is to take four Grains, during the time of Intermision.

Epithems are, also, frequently beneficial, as, also, Unctions of the Spine of the Back, and the drinking astringent Liquors. Thus,

Take of the Oils of Scorpions, Castor, Juniper-berries, Camphire obtained from the Root of the Cinnamon-tree, Bays, and Turpentine, and of the terebinthinated Balsam of Sulphur, each half an Ounce : Mix for a Liniment.

Take of the Whole of the broad-leaved Plantain, ten Ounces ; and of recent Tormentil-root, two Ounces : Boil in two Pints of Water ; and let the Patient drink three Ounces of the Decoction every two Hours.

Take of Roch-alum, one Dram ; of Nutmeg two Drams ; and of the Powder of *Armenian* Bole, twelve Grains : Reduce to a Powder, to be taken an Hour before the Paroxysm.

Epithems for the Wrists may be prepared in the following manner :

Take of Currants, and Hops, each two Ounces ; and reduce to a Poultice, to be applied to the Wrists : Or,

Take of the Tops of green Rue, two Ounces ; and of Mustard-seeds, two Drams : Bruise, and apply to the Wrists.

That the Cure of particular Intermittents may be understood, 'tis to be observed, first, that the shorter the Intervals of true Intermittents are, the sooner they are cured ; and the longer the Intervals are, the more Time is required to their Cure. Secondly, that, for this Reason, they approach much to the Nature of acute Fevers, and are sometimes converted into them. Thirdly, that for this Reason, their Cause is more moveable, tho' more copious. Fourthly, that vernal Intermittents, upon the Approach of warm Weather, are spontaneously terminated. Fifthly, that autumnal Intermittents, on the Approach of cold Weather, are increased. Hence 'tis obvious what Fevers are curable, and by what Medicines. *Boerhaave Aph. & Mat. Med.* See ARANEA.

Sydenham, speaking of the intermittent Fevers, which raged from the Year 1675, to 1680, observes, that though Quartans were more frequent formerly, yet now Tertians and Quotidians were most common, unless the latter may be intitled double Tertians ; and, also, that though these Tertians sometimes began with Chills and Shivering, which were succeeded first by Heat, and soon after by Sweat, and ended at length in a perfect Intermision, returning again after a fixed time ; yet they did not keep this Order after the third or fourth Fit, especially if the Patient was confined to his Bed, and used hot Cardiacs, which increase the Disease. But afterwards this Fever became so unusually violent, that only a Remission happened in place of an Intermision ; and approaching every Day nearer to the Species of continued Fevers, it seized the Head, and proved fatal to abundance of Persons.

As to the Cure, I have learnt, says he, from the Experience of many Years, that 'tis dangerous to attempt to remove Tertians and Quotidians by Sudorifics ; for when they are recent, and have assumed no certain Shape, they nearly approach to continued Fevers. And though it is well known, that as soon as the Sweat flows, the Restlessness, and other Symptoms, presently go off, and a perfect Intermision succeeds, and consequently that it should be somewhat promoted, or, at least, not hindered, when the Fit is going off ; yet 'tis manifest, that, if Sweat be forced beyond the due Degree, the Intermittent becomes a continued Fever, and Life is endangered. I conceive the Reason of this to be, that so profuse a Sweat, (since it exceeds the Degree of the febrile Matter, already so exalted by the Heat of the Fit, that it may now be expelled by Despumation) after it has expelled that Part thereof, which might produce a single Fit, proceeds to inflame the Blood. Upon considering, therefore, the Inefficacy of this Method, and the Inconveniencies attending other Evacuations, as Bleeding and Purging, both which, by weakening the Texture of the Blood, prolong the Disease, the *Peruvian* Bark afforded me the surest Hopes ; of which I can truly affirm, notwithstanding the Prejudice of the Vulgar, and a few of the Learned, that I never found, or

P Y R

could reasonably suspect, any ill Consequence follow its Use ; unless, that such as have taken it for a considerable time, are sometimes seized with a scorbutic Rheumatism. But this Disorder rarely proceeds from this Cause, and when it does, readily yields to the Remedies adapted to it.

And, in reality, if I were as certain of the Continuance of its Effects, as I am of the Innocence of the Bark, I should not scruple to prefer it to all the Medicines hitherto known ; since it is not only excellent in this Disease, but, also, in those of the Uterus and Stomach : So little Reason there is to complain of its Unwholsomeness.

But, I conceive, that the Bark has been ill spoken of, principally, for the following Reasons : (1.) Because the numerous Train of violent Symptoms, which accompany, previously to the Use of the Bark, inveterate Intermittents, are ascribed to it, though it has been taken only once. (2.) As it cures the Disease by a secret Virtue, and not by any sensible Evacuation, several Persons maintain, that the morbid Matter, which ought to have been expelled, is retained in the Body by its Astringency, ready to occasion fresh Disturbance, the Disease not being entirely carried off. But such Persons do not sufficiently consider, that the Sweats, happening at the Decline of the Fit, have expelled all the morbid Matter that was collected during the preceding Interval, so that only the Seeds of the Disease remain, which require time to be ripened ; and the Bark, by closely pursuing the retiring Fit, and cutting off the Supplies of the Disease, cannot be a means of retaining any morbid Matter in the Blood, which is now existent there only in Embryo ; consequently the Bark is not to be esteemed productive of those Obstructions, which are commonly judged to proceed from its Use.

But how does it appear, that the Bark cures Intermittents by its Astringency ? In order to prove this, other Astringents, possessed of the same Virtue, must first necessarily be produced : I have tried the strongest ineffectually. Besides, the Bark effects a Cure, even where it purges, which is sometimes the Case. Upon the Whole, therefore, they act the wisest Part, who limit their Inquiries to their Abilities. But, if a Person, imposing upon himself, should imagine, that he is possessed of other Faculties than such as are useful, either to Natural Religion, by which we learn that God, the Creator and Governor of all things, is to be worshipped with profound Veneration, as he justly merits ; or to moral Philosophy, that he may practise Virtue, and render himself every way useful to Society ; or, lastly, to the Medicinal, Mathematical, and Mechanical Arts, which supply Mankind with many Helps and Conveniencies ; I would have him in the first place, deduce an Hypothesis from Natural Philosophy, that may enable him to explain the Cause of but a single specific Difference of Things in Nature. For Instance, let him account for the universal Greenness of Grass, and why it is never found of any other Colour, and the like. And if he can do this, I will readily embrace his Sentiments ; but, if not, I shall not scruple to affirm, that all the Diligence and Caution of a Physician should be employ'd in investigating the History of Diseases, and applying those Remedies which stand recommended by Experience for the Cure thereof ; observing, notwithstanding, that Method which is founded on right Reason, and not the Result of idle Speculations. I will, therefore, briefly deliver what Experience hath taught me, relating to the Method of exhibiting the Bark.

The *Peruvian* Bark, commonly called the *Jesuits Powder*, to the best of my Remembrance, began to be esteemed at *London*, for the Cure of Intermittents, and especially Quartans, about twenty-five Years since ; and, indeed, very deservedly, as these Diseases before this time were seldom cured by any other Method, or Medicine ; whence they were reputed the *Opprobria Medicorum*, and not without Cause. But, not long after, it lost its Character, and was entirely disused, for two considerable Reasons : (1.) Because, being exhibited only a few Hours before the coming of the Fit, according to the received Custom of that Time, it sometimes destroyed the Patient ; which I remember happened to Mr. *Underwood*, a Citizen and Alderman of *London*, and to one *Potter*, an Apothecary in *Black Fryars*. This fatal Effect of the Powder, though very rare, did, however, deservedly prevail with the more prudent Physicians to refrain from its Use. (2.) Because, tho' the Patient was, for the most part, freed from the Fit, that would otherwise have come, by this Medicine, yet a Relapse commonly happened within a Fortnight, particularly when the Disease was recent, and had not been weakened by a long Continuance. These Reasons weigh'd so much with the Generality, that they lost all Hopes they had hitherto conceived of this Medicine ; nor did they esteem it so material to prevent the Access of a Fit for a few Days, as, upon this account, to endanger their Lives by taking the Bark.

But, having some Years since thoroughly considered the extraordinary Virtues of the Bark, I was firmly persuaded, that Intermittents

termittents could not be better cured than by this efficacious Medicine, provided it were given with proper Caution. For this Reason I spent much time in considering how I might prevent the Danger ensuing from its Use, and the Relapse that succeeded in a few Days, which were the two Inconveniencies to be remedied, and by means thereof, to restore the Patient to perfect Health.

1. I conceived, that the Danger proceeded less from the Bark itself, than from the unseasonable Use thereof; for when a large Quantity of febrile Matter is collected in the Body upon the intermediate Days, the Bark, if taken immediately before the Fit, obstructs the Expulsion of the morbid Matter in the natural way (that is by the Violence of the Fit); which, being preternaturally detained, usually endangers Life. But I judged I could remedy this Evil, and, also, prevent the fresh Generation of febrile Matter, by giving the Powder directly upon the Departure of the Fit, so that a Stop might be put to the succeeding one; and by repeating it upon the intermediate Days, at proper Distances, till the Approach of a new Fit; and that by this means the Blood might be impregnated gradually, and consequently safely, with the Virtue of the Bark.

2. As the Relapse, which generally happened in a Fortnight, seemed to me to proceed from not sufficiently impregnating the Blood with the Virtue of the Febrifuge, which, however efficacious, was not powerful enough to cure the Disease at once, I judged, that the best Method of preventing a Relapse, would be to repeat the Powder, at proper Intervals, before the Virtue of the preceding Dose was quite spent, even though the Intermittent appeared to be conquered for the present.

These Considerations led me to the following Method, which I now use. When I am called to a Person afflicted with a Quartan, suppose on a *Monday*, if the Fit is expected the same Day, I refrain from doing any thing, and only give the Patient Hopes, that he shall be freed from the next Fit. And, in order to effect this, I exhibit the Bark upon the two intermediate, or well Days, that is, *Tuesday* and *Wednesday*, in the following manner:

Take of *Peruvian* Bark, very finely powdered, one Ounce; Syrup of Cloves, or of dried Roses, enough to make it into an Electuary, to be divided into twelve Doses; whereof let the Patient take one every fourth Hour, beginning immediately after the Fit is gone off, and drinking, after each Dose, a Draught of any Kind of Wine.

Or, if Pills be more agreeable,

Take of the *Peruvian* Bark, very finely pulverized, one Ounce; Syrup of Cloves, enough to make it into Pills of a middling Size; of which let the Patient take six every fourth Hour.

But an Ounce of the Powder may be mixed with a Quart of Claret, with less Trouble, and equal Success, and eight or nine Spoonfuls of it may be given at the Intervals above-mentioned. I order nothing on *Thursday*, when the Fit is expected, because, for the most part, it does not come, the Remainder of the febrile Matter being despumated and expelled the Blood by the usual Sweats, which terminated the preceding Fit, and a Collection of fresh Matter being prevented by the Repetition of the Powder upon the intermediate Days.

But, in order to prevent a Relapse, which was one of the Inconveniencies above recited, I always gave the same Quantity of the Powder, an Ounce divided into twelve Doses, upon the eighth Day precisely, after taking the last Dose. But though a single Repetition of the Bark in this manner frequently removes the Disease, yet the Danger is not over, unless the Patient will comply with the Directions of his Physician, and take it thus a third or fourth time; especially when the Blood has been impoverished by some preceding Evacuation, or the Body unadvisedly exposed to the cold Air.

Now, though there is no inherent purgative Virtue in this Medicine, yet a violent Purging is frequently occasioned thereby, on account of some peculiar Idiosyncrasy in the Constitution. In this Case, it is indispensably necessary to exhibit Laudanum therewith, to prevent its having this Effect, which is manifestly as opposite to its own Nature, as it is to this Disease, and that it may be retained long enough to answer its End. Therefore I direct ten Drops of Laudanum to be given in a little Wine, after every other Dose of the Powder, provided the Purging does not go off.

I follow the same Method in other Intermittents, whether Tertians or Quartans; for, immediately upon the Fit's going off, I administer a Dose of the Powder, and repeat it in point of Frequency, at as close Intervals, during the time of the Intermittion, as the Nature of the Disease will admit; but with this Difference, that a Tertian may be so far conquered with

six Drams of the Bark, as at least to give a Respite; whereas a Quartan can very rarely be removed with less than an Ounce of it, divided into proper Doses.

But tho' Tertians and Quotidians, after a Fit or two, may seem entirely to intermit, yet, as I have before observed, they afterwards frequently degenerate into a Species of continued Fevers, and only come to a Remission even upon those Days that promised an Intermittion; especially when the Patient has been kept too warm in Bed, or been tormented with Medicines to carry off the Intermittent by Sweat. In this Case, I have no other way left, but to take Advantage of the Remission, though it be ever so small; and accordingly, I give the Powder immediately after the Fit is gone off, as near as I can conjecture, and repeat it every four Hours, as above-mentioned, without waiting for a regular Intermittion, because otherwise the alexiterial Virtue of the Bark cannot be communicated to the Blood in so short an Interval.

And though the present reigning Intermittents, after the second or third Fit, incline to continued Fevers, yet they must be referred to the intermittent Kind; and, therefore, I scruple not to order the Bark, even in the most continued of this Species; the Repetition of which, in the above-mentioned manner, will certainly remove the Disease, provided the constant Warmth of the Bed, and the improper Use of Cardiacs, have not rendered it a continued Fever; in which Case, I have frequently observed, that the Bark proves ineffectual. Nor have I ever found, that the Wine, wherein the Bark is administered, did the Patient Harm, which might reasonably be suspected; but, on the contrary, the Heat, Thirst, and other febrile Symptoms, generally went off soon after taking a sufficient Quantity of this Medicine. But it must be here observed, that the nearer the Intermittent approaches to a continued Fever, either spontaneously, or from using too hot a Regimen, so much the more necessary it is to exhibit a larger Quantity of the Bark; for I have sometimes found, that Intermittents would not yield to less than an Ounce and an half, or two Ounces, of the Bark.

As some Persons can neither take the Bark in Powder, an Electuary, or in Pills, I give them an Infusion of it, which is made with two Ounces of Bark grossly powdered, infused cold for some time in a Quart of *Rhenish* Wine. This Infusion, being several times passed through a fine Strainer, becomes so clear, as not to be nauseated by the nicest Palate. Four Ounces of this Infusion, after it has stood some Days, should seem equivalent in Virtue to a Dram of the Powder in Substance; and, as it is neither disagreeable, nor lies heavy upon the Stomach, it may be exhibited with twice the Frequency of the other Formulæ, till the Disease vanishes.

When this Disease hath assumed no regular Appearance, it is sometimes attended with an almost continual Vomiting, so that the Bark cannot be retained in any Form; in which Case the Vomiting must be stopt, before it can be administered. For this Purpose I order a Scruple of Salt of Wormwood to be dissolved in a Spoonful of fresh Lemon-juice, and taken six or eight times in the Space of two Hours; and afterwards I give sixteen Drops of Liquid Laudanum in a Spoonful of strong Cinnamon-water; and soon after, if the Vomiting stops, I proceed to use the Bark.

For Children, who, on account of their tender Age, can scarcely bear to take this Remedy in any other Form, at least in a suitable Quantity to effect a Cure, I generally prescribed the following Julap:

Take of black Cherry-water, and *Rhenish* Wine, each two Ounces; *Peruvian* Bark finely powdered, three Drams; Syrup of Cloves, an Ounce: Mix them together for a Julap. Let a Spoonful or two (according to his Age) be given to the Child every fourth Hour, till the Fits return no more, dropping into every other Dose, in case of a Looseness, one or two Drops of Liquid Laudanum.

It must be further observed, that the Intervals between the Fits in Tertians and Quotidians are so short, that they do not allow sufficient time to impregnate the Blood perfectly with the febrifuge Virtue of the Bark; so that 'tis not to be supposed, that the Patient should so certainly miss the next Fit after the first time of taking it, as it commonly happens in a Quartan; for the Medicine, in these Cases, will frequently not effect the Cure in less than two Days.

It must, also, be remark'd, that if the Patient, notwithstanding the Observance of the Cautions above delivered, should relapse, which happens less frequently in a Quartan than in Tertians and Quotidians, it will become a prudent Physician not to adhere too closely to the Method of giving the Bark at the above-mentioned Intervals; but to attempt the Cure, as his Judgment shall direct, by some other Procedure: And here the bitter Decoction is generally esteemed of most powerful Efficacy.

With

P Y R

With respect to Diet and Regimen, the Patient must be allowed the Use of all Kinds of solid and liquid Aliment that agree with his Stomach, Fruit and cold Liquors always excepted; because they impoverish the Mass of Blood, and are very subject to occasion a Relapse. Let the Diet, therefore, be Flesh of easy Digestion; and a moderate Use of Wine may be permitted for common Drink; by the sole Use whereof I have sometimes recovered such as have been so debilitated by the frequent Return of the Intermittent, that the Bark proved ineffectual to their Cure. The Patient, also, must not unadvisedly expose himself to the cold Air, till the Blood has recovered its former healthy State.

It must here be remark'd, that tho', in treating of Intermittents heretofore, we recommended due purging after the Disease was gone off, yet this practical Caution is only to be understood of such Intermittents as either went off spontaneously, or were cured without the Assistance of the Bark: For when the Cure is effected by this Medicine, Cathartics are unnecessary and injurious; so powerfully does the Bark, alone, resist the Fits, and the Indisposition they occasion. Hence, therefore, all Kinds of Evacuations must be refrained from; for the gentlest Purge, even a Clyster of Milk and Sugar, will certainly endanger a Relapse, and, perhaps, reproduce the Disease.

And here it is proper to mention, that a very remarkable Symptom sometimes succeeded these Intermittents in the first Years of this Constitution: For the Fits did not begin with Chills and Shivering, which were succeeded by a Fever; but the Patient was seized with the Symptoms of a true Apoplexy; though, in Reality, how nearly soever it resembled this Disease, it was nothing more than the Effect of the Fever's seizing the Head; as plainly appeared from other Signs, as well as the Colour of the Urine, which in Intermittents is usually of a deep red, though not so red as in the Jaundice, and, also, lets fall a lateritious Sediment. But though in this Case all Kinds of Evacuation seem to be indicated, in order to make a Revulsion of the Humours from the Head, as is generally practised in the genuine Apoplexy, yet they are to be wholly refrained from, because they are very prejudicial in the Intermittents, whence this Symptom originally proceeds, and, consequently, endanger Life, as I have observed. On the contrary, therefore, we must wait till the Fit goes off spontaneously, when the Bark, in case it could not be given sooner, must immediately be exhibited, and repeated with sufficient Frequency in the Intervals, till the Patient be perfectly recovered.

And these are the Observations I had to communicate, in a summary way, concerning the Use of the Bark; for my Design was not to consult the Pomp of Medicine: And, in reality, they who add any thing more to the Bark than a Vehicle, which is necessary to carry it into the Stomach, in my Opinion either do it ignorantly, or fraudulently; which every good Man must detest, who, as a Part of the Whole, would not be induced to commit such a Fraud, for his private Advantage. As to what remains, if my Contemporaries had pleased to have considered what I published in my History of acute Diseases, (which, it is highly probable, I was acquainted with before that time) relating to the Method of exhibiting the Bark in the Intervals of the Fits, and the succeeding Repetition of it when the Disease was gone off, perhaps the Lives of many Persons had been saved; how much soever some Men contemned my slender Endeavours for the public Good, and slighted the Cautions there delivered in the following Words; which contain, in a concise manner, what I have here judged proper to enlarge upon.

1. "Great Caution must be had not to give this Bark too early, that is, before the Disease be in some measure spontaneously abated; unless the extreme Weakness of the Patient requires it to be given sooner: For the giving it too soon may render it ineffectual, and even fatal, if a sudden Stop should be thus put to the vigorous Fermentation raised in the Blood, in order to its Despumation. 2. We must not detect Purging, much less Bleeding, in order to carry off a Part of the febrile Matter, and render the Bark more effectual; for they both weaken the Tone of the Parts, whence the Disease returns to much the more expeditiously and certainly, after the Virtue of the Bark is spent. It were better, in my Opinion, to impregnate the Blood with this Medicine by Degrees, and at distant Intervals from the Fit, rather than endeavour to stop it at once, just upon its coming; for by this means the Bark has more time to produce its full Effect in; and, besides, the Mischief is avoided that might happen by putting a sudden and unseasonable Stop to the Fit just approaching. 3. The Bark must be repeated at short Intervals, that the Virtue of the former Dose may not be entirely gone off, before another be given; and by repeating it frequently the Disease will, at length, be perfectly cur'd. For these Reasons, I prefer the following Method of giving the Bark to all others,

P Y R

"Take of the *Peruvian Bark*, one Ounce; Conserve of
"Roses, two Ounces: Make an Electuary thereof. Take
"the Quantity of a large Nutmeg, every Morning and
"Night, on the intermediate or well Days, till the whole
"be taken; and let it be repeated thrice, interpoling a
"Fortnight between each time."

But though the Bark is the best Medicine hitherto discover'd, for the Cure of these Diseases; yet I have known Vernal Tertians, in Persons in the Prime of Life, and of a sanguine Constitution, yield to the Use of the following Remedies: For Instance, Bleed in the Arm upon the intermediate Day; and some Hours afterwards, upon the same Day, give an Emetic of the Infusion of *Grocus Metallorum*, regulating the time in such manner, that its Operation may be over before, the Fit comes on; and as soon as it is gone off, let the following Electuary be given.

Take of the Extract of Wormwood, Gentian, and the lesser Centaury, each two Drams: Mix them together, and divide the Whole into nine Doses. Of which, let one be taken every fourth Hour; drinking, after each Dose, of the bitter Decoction without Purgatives, and of White-wine, each three Ounces.

There is another Method of curing these Tertians in Persons of low Circumstances, who are unable to be at the Expence of a long Course of Medicines, in order to their Cure. As,

Take of *Virginian Snakeweed*, in fine Powder, a Scruple; White-wine, three Ounces: Mix them together. Let the Patient take it two Hours before the Fit comes on; and, being well covered with Cloaths, let him sweat three or four Hours afterwards; and let it be repeated twice in the same manner.

In the following Year 1679. these Intermittents re-appeared at the Beginning of *July*, and, increasing every Day, proved very violent and destructive in *August*: But, having already treated of these at large, I shall only observe, that they gave way to a new Epidemic, which proceeded from the manifest Qualities of the Air in *November*. *Sydenham*.

OF THE SALUBRITY OF FEVERS.

Such is often the wise and admirable Oeconomy of Nature, that what at first Sight appeared noxious and prejudicial, tends to promote and advance the Happiness and Health of Mankind. In no Instance is this Doctrine more remarkably verified, than in Fevers, since the febrile Commotions of the Blood, which accompany many Disorders, both of the chronical and acute Kind, are of such a Nature, as to banish and extinguish morbid Causes; and, consequently, they must be rather beneficial than detrimental to the human Body.

Before we proceed to the Confirmation of this Assertion, we shall observe, that this Doctrine is supported by the Authorities of the Antients. Thus the divine *Hippocrates*, in his Writings, often affirms, that a supervening Fever cures some Disorders, to be afterwards mentioned: And *Celsus*, in *Lib. 2. Cap. 8.* tells us, that a Fever itself, which to some may seem strange, often proves salutary: For a Fever allays Pains of the Praecordia, if not attended with an Inflammation, mitigates Pain, and, succeeding Convulsions of the Nerves, and a Rigor, totally removes them. It, also, relieves the Disease of the small Intestines arising from a Difficulty of Urine, if by the Heat it promotes a Discharge of it: Besides, a Fever was by the sagacious Antients defined the Struggle, Motion, or Contest of Nature; against the morbid Cause and Force of the Disorder; by which they intended to insinuate, that it was rather of a salutary, than of a noxious Nature: For that which fights against the Enemy of Life, which is the morbid Cause, cannot, in its own Nature, be pernicious. Hence *Linden*, in *Selectis Medicis*, cannot sufficiently wonder, that, notwithstanding the many Instances of this, in the Writings of *Hippocrates*, some should yet ascribe this Doctrine to *Campanella*, and damn it as a Novelty invented by a Man who was no Physician: For that Author, in *Tr. de Sensu Rerum*, *Lib. 7. Cap. 2.* affirms, that no Fever is a Disease, but a Remedy against other Diseases. This Opinion is, also, espoused by *Joh. de Mes*, in *Comment. Philof. Cap. 5. Loc. 5.* and the celebrated *Sydenham* is at a great deal of Pains to prove, that a Fever is the Effort or Instrument of Nature, by which the pure are separated from the impure Parts, and the morbid Cause exterminated and expelled.

Hence the Reason is obvious, why *Hippocrates*, in *Epidem. Lib. 2.* informs us, that it is the Office of a prudent Physician, sometimes, to excite Fevers: Besides, nothing more confirms this Doctrine, than the universal Agreement of the Antients in this, that Nature was the best Physician; cured best; terminated

nated Disorders most happily; and, as *Galen* expresses it, made a violent Insurrection against the morbid Cause; strongly attempted Crises and Excretions; and at last, by Concoction and Evacuation, freed from mortal Disorders: For the Struggle or Effort of Nature against the morbid Cause, is nothing but a Fever. Hence we justly conclude, that a Fever is the Instrument by which Nature preserves the human Body, opposes morbid Causes, and, by expelling them, restores Health.

All Physicians, both antient and modern, have accounted a Fever a Disease in a certain Sense; and *Hippocrates*, in *Lib. de Flatibus*, *Secl. 3.* calls a Fever a common Disease, which accompanies other Disorders, and especially an Inflammation: For a Fever is a preternatural Commotion of the Blood and Humours, which not only injures and weakens the Functions of the Body and Mind, but, also, proves mortal: For few are taken off without a Fever. But this does not hinder it from being, in other respects, the Remedy not only of its own Cause, but, also, of other Disorders: So that we cannot sufficiently admire the stupendous Skill of the adorable Architect, who has so artfully contrived the human Structure, that by its Force and Strength it cannot only defend itself from impending Injuries, but, the Commotions or Effects of the morbid Cause are of such a Nature, that, if all other Circumstances are equal, they are, also, sufficient for removing themselves, and the Disorder. But that this Doctrine may be the better comprehended, we shall inquire into the Nature and Essence of a Fever, examine how it is created by Nature, and determine what Fevers produce such salutary Effects, at what Time, in what Diseases, and under what Circumstances, such laudable Consequences may be expected.

How common a Fever is, how often it accompanies most other Disorders, and how much the Knowledge of it has hitherto been involved in Perplexities and Obscurities, is sufficiently known; for almost all the celebrated Writers embrace different Opinions and Hypotheses, with respect to Fevers: But, without enumerating them, we shall only observe here, that as Health and Life depend on the due Motion of the animal Spirits, and Circulation of the Blood, so the Origin and Causes of all internal Disorders ought to be deduced and explained from some preternatural Circumstance in these Fluids. Hence we define a Fever, a too brisk Motion of the Muscles, especially of the Heart, accompanied with an unequal Circulation of the Blood, a Change of the Excretions, of the natural Heat, Pulse, and remitting or intermitting at certain Times.

A Fever is, therefore, a strong and increased Motion of the muscular System. Motion, by the Consent of the greatest Physicians, is performed in the human Body by means of an highly subtil and fluid Substance, by some called the animal Spirits, and by others the vital Principle, which exists originally in the Semen, is contained in the Blood, and afterwards supported by the external Air, and spirituous Aliments. This Substance was by the Antients called *Nature*, the *Anima purpurea*, and the *Calidum innatum*; and is the Cause not only of intestine, but, also, of circular Motion; moves all the Limbs, and is the genuine Instrument of Sensation and Reasoning. This Substance is capable of having its Motion augmented and accelerated in the Nerves, and muscular Fibres; as evidently appears in Spasms of the Skin, and internal Parts, and during an increased and more frequent Action of the Heart, accompanied with preternatural Heat. We, therefore, affirm, with *Helmont*, in *Lib. de Febris*, *Cap. 1.* that the febrile Heat is not proper to the peccant Matter, or the Effect of it; but that it is the Effect of the animal Spirits acting too violently, which, as in a sound State, they are the Source of natural Heat, so they are, also, the immediate, primary, and efficient Cause of a febrile Heat. But I differ from *Helmont* in this, that he says the material Cause of a Fever is only occasional, and free from a material physical Influence and Concurrence, to the Production of a Fever; but that it affords an Occasion or Opportunity to the intelligent *Archæus*, or Nature, which, in the same manner as when an Object of Anger is externally presented, by her proper Force and Energy, rouses herself, attacks the Enemy, and endeavours to expel him. But I cannot deny, that the morbid Cause has a certain Power of Action and Motion, which, by acting inordinately on the animal Spirits, or vital Principle, by a certain mechanical Necessity, excites that impetuous Motion observable in the Heart, Arteries, and Muscles: For the febrile or morbid Motion is produced by the Action and Reaction of the active morbid Matter, and the moving vital Principle in the human Body; in which Sense it may be admitted, that Nature, or *Archæus*, is the Author of Fevers.

But we must determine by what means the febrile Matter acts on the animal Spirits in the Nerves and Membranes; what sort of Effect or Reaction succeeds this Operation, and how the Symptoms, common to Fevers, are produced. Now we assert,

that all Motion of the muscular Fibres is active, systaltic, or contractory: Hence such a Motion must be rendered preternatural, either by Intension, or Relaxation, of the Fibres. The Intension is generally called a Spasm, which is a preternaturally strong and long-continued Contraction of the muscular Fibres. Such Spasms constitute the first and fundamental Cause of all preternatural Disorders, and morbid Commotions, and produce many and various Effects; since there is hardly any Disease without Spasms: These happen more especially in Fevers, and the Generation of excessive Heat, where Spasms are the Cause of the unequal Circulation of the Blood; the irregular and increased Pulse, and the other Symptoms: For as when the Tone of the Muscles, and Pulsation of the Heart, are moderate, and in due Proportion, the Fluids circulate regularly, the excrementitious Parts are secreted and eliminated, and such Substances, as are subservient to Life and Health, are retain'd, so, on the contrary, as soon as the Tone of the Muscles is vitiated; or as soon as a Spasm happens, and the Motion of the Heart becomes inordinate, the whole Order of the vital Motions, and the Oeconomy of the Secretions and Excretions, are disturbed and perverted.

The evident Signs and Effects of spasmodic Contractions of the muscular Fibres and Membranes, which in the Beginning of Intermittents appear evidently, but in a more languid manner in the Remission of continual Fevers, are various, according to the Diversity of Patients and Fevers. The following Symptoms, especially in the Beginnings of these Disorders, appear: The Skin, which is highly sensible, and the Organ of Touch, is much constricted, the lax Pores contracted, and the Skin raised into Tubercles, like that of a Goose: The Vessels, which were before tumid, and full of Blood, subside and disappear; the natural Redness is converted into a livid Colour; the turgid State of the whole Body subsides; there is a violent Horripilation, Rigor, and Refrigeration, especially of the Extremities; the Skin, which was before moist, becomes dry and parched; and the Sweat is suppressed. But this Compression and Constriction of the Fibres and Vessels is not only found on the Surface of the Body, but, also, in the internal Parts; as is obvious, about this time especially, in slow and continual Fevers, from the copious Discharge of aqueous limpid Urine, an obstinate Costiveness, a Retention of the Flatulencies, the Impossibility of injecting Clysters, the Anxiety of the Præcordia, the Nausea, and Disposition to vomit, and the intense Pain about the spinal Marrow, and Region of the Loins; all which Symptoms sufficiently evince, that not only the Stomach and Intestines, but, also, the Kidneys, and hepatic Vessels, are spasmodically constricted. Nor is the Substance of the Heart, Arteries, and Muscles, free from such Spasms, which, being rooted in the Spirits, by Consent affect the whole Body; as is evident, from the small, frequent, hard, and weak Pulse, arising from an insufficient and less free Influx of the Spirits. All these Symptoms differ not only in Degree, but, also, with respect to the Time of their Accession; since in Intermittents they appear in the Beginning, whereas, in those of the continual Kind, they appear in the Height and Decline of the Disorder, without observing Time, Tenor, or Proportion. And, certainly, there is no Fever with which the skillful Physician will not observe such Symptoms complicated. These Things were diligently observed by *Helmont*, who, in *Lib. de Febr. Cap. 9.* gives us the following remarkable Observations: The Part in which the febrile Matter is lodged, is first corrugated, which is easily perceptible in the Præcordia; in the affected Part all the Veins are disorder'd and constricted, by a Contraction of their oblique Fibres: Hence arises a rare, hard, and small Pulse, at once the Sign and the Cause of the cold Fit. This corrugating Stricture of the Veins will be easily perceived by every feverish Person; if he carefully adverts to his own Condition; and even a sound Person, by careful Attention, may be sensible of the natural State of the Veins: For when the Scrotum is lax, and hanging down, it is spontaneously corrugated, when the Excrements arrive at the Sphincter of the Anus. It is, therefore, natural for the Veins, and Parts primarily affected, to corrugate themselves; and as almost all Veins have corresponding Arteries; these must, also, in Consequence of their Communication, be seized with Convulsions. Spasms constitute the principal Cause both of the febrile Rigor and Heat; for, by means of the Spasms, the Circulation of the Blood through the Parts of the Body is rendered unequal, so that some Parts are turgid with Blood, whilst others are entirely deprived of it. In some Parts it, also, moves more quickly, and in others more slowly: Hence some Parts are affected with a Horror and Coldness, whilst others are seized with a preternatural Heat: And this unequal Circulation of the Blood, arising from Spasms, constitutes the very Essence of a Fever. None, either of the Antients or Moderns, has more judiciously treated of this, than *Hippocrates*, in his *Treatise de Flatibus*. For, says he, when the lower Belly is obstructed, Flatulencies run through all the Parts of

the Body [by Flatulencies he means irregular Motions of the Spirits, which produce Spasms, as is obvious from what he had before said], and, being conveyed to the Parts full of Blood, refrigerate them; since, by constricting them, they hinder the Afflux of the Blood. But when those Parts, which are the Source and Fountain of the Blood, are refrigerated, such as the Heart and Liver, an Horror penetrates through the whole Blood, and, when the whole Blood is refrigerated, an Horror must, of course, seize the whole Body. For this Cause, therefore, the Horrors first arise before the Fever; and, according to the Quantity in which the disorderly Spirits have made their Influx, such will the subsequent Rigor be. If many cold animal Spirits have made their Influx, the Rigor will be vehement; but if a smaller Quantity of less cold Spirits have made their Influx, the Rigor will be less violent. These Horrors are, also, accompanied with Tremors, which happen by this means: The Blood, dreading a present Horror, runs through all the Parts of the Body, and flows principally to the warmest Parts: For when the Blood flows rapidly from the Extremities, the Viscera and Flesh tremble; for some Parts of the Body are full of Blood, whilst others contain none at all: And the Parts without Blood cannot rest for Cold, but shake, because depriv'd of Heat: Those Parts, on the contrary, which are full of Blood, tremble, and are seized with Inflammations, in Consequence of the Redundance of the Blood. This Doctrine he confirms in *Lib. 2. de Morbis, Sect. 5.* The Blood being condensed, the Veins are contracted, and, in their Contraction, contract the Body, and excite a Tremor. If the Blood is but little condensed, the Symptom produced is only called a Rigor; but if it is greatly condensed, a Horror is excited, which greatly afflicts the Patient. That a greater or less Fever is necessarily produced after the Horror, is owing to this: When the Blood, by any Force, (that is, an increased Motion of the Heart and Arteries) becomes warm, and again resumes its own Nature, that is, exchanges a cold for a hot State, the Phlegm and Bile mixed with the Blood, by the violent Motion, also, become warm, and even much hotter than the Blood: When these Fluids are, therefore, warmed after the Rigor, a Fever must succeed the Heat of the Blood. In this Passage *Hippocrates*, from mechanical Principles, and the Laws of Motion, so accurately describes the Progress and Generation of these Fevers, that we may justly doubt whether the Moderns can give a more distinct Account of them.

Nor is the Doctrine of *Erasistratus* very different from this of *Hippocrates*: For that Physician, as *Celsus*, in *Lib. 1.* observes, was of Opinion, that if the Blood was conveyed into the Veins accommodated to the Spirits, that is, into the Arteries, and excite an Inflammation, which the *Greeks* call *Phlegmone*, that Inflammation excites such a febrile Commotion as is perceived in a Fever: And, afterwards, when, mentioning *Erasistratus*, he tells us, that he affirmed, that a Fever was produced by a Transfusion of the Blood into the Arteries, in consequence of its Redundance. By these Passages, the Inequality of the Circulation of the Blood, in all febrile Commotions, is excellently described: For the Rigor which generally precedes the febrile Heat, is a Kind of Spasm, by which the capillary Vessels, being obstructed, hinder the free Circulation and Return of the Blood through the Arteries to the Heart: Hence the Blood, regurgitating to the Arteries and Left Ventricle of the Heart, and pressing upon them by its Weight, invites a freer Influx of the Spirits, and increases the Pulse. Hence *Hippocrates*, in *Lib. de Flatibus*, informs us, that the Blood, when warm, and forcibly propelled, cannot pass through a narrow way (the Arteries) with Celerity, because many Things hinder and obstruct its Motion: By these means, the Pulsations of the Arteries are produced, and in this manner Fevers and Pains are excited.

From what has been said, it is sufficiently obvious, that, in Fevers, the Cold which is principally perceived towards the Extremities, is owing to the Defect of a sufficient Influx of Blood, and a languid intestine Motion of that Fluid; whereas the succeeding febrile Heat depends upon an increased intestine Motion of the Fluids.

But as the Essence of a Fever consists in an unequal Circulation of the Blood, and the Cold, Horror, Heat, and other Symptoms depending upon it; we shall, having already considered the Origin of the Refrigeration, now investigate the Source and Causes of the febrile Heat. The various Opinions of Authors, concerning this Phenomenon, are found in *Frid. Hoffmanni Dissertat. de Caloris & naturalis & præternaturalis Causis.*

It is an usual Question, among Physicians, Whether the Violence of the febrile Heat depends on an increased Circulation of the Blood. *Borelli*, in *Tr. de Motu animal.* seems to have been the first who maintained this Opinion: For, says he, the most proper Affection and Characteristic of a Fever is, an increased Pulse, and a violent Commotion of the Heart and Ar-

teries succeeded by a febrile Heat. This is not only universally agreed upon, but, also, confirm'd by Reason and Experience; because, upon a violent Commotion and Concussion of the Heart, there soon after succeeds a new and preternatural Heat of the whole Body, as is obvious in Anger, and violent Commotions of the Body. In like manner, when such a Motion of the Heart is removed, that is, when its Action is diminished, and rendered slower, a Tepidity, Rigor, and Coldness, succeed; as it happens in the Colds and Rigors of Quartan Fevers. He afterwards, in the same Work, tells us, that, by the vehement and quick Pulsation of the Heart, the Blood, which is return'd during the Rest of the Heart, being poured from the *Vena Cava*, must be impelled into the Arteries, as far as the minutest Capillaries, by the same brisk Motion with which the Heart is contracted; as is obvious, from the Laws of the Circulation. It is, also, certain, from the Evidence of Sense, that, by a violent and brisk Circulation of the Blood, a Fervor and Heat, which did not before exist, are excited through the whole Body; the Origin of which is not, in my Opinion, to be deduced from Motion, considered as Motion, but, rather, from the Nature of the Blood itself, which contains a Spirit, or Oil, or, rather, igneous Particles, sheathed up; which, when dissolved, and disengaged from their Fetters, in such a manner as to exert their Motion, excite a sensible Heat.

Next, therefore, *Borelli* deduces the Heat of the Blood from an increased intestine Motion of its subtil and sulphureous Parts; for, by the Consent of all modern Philosophers, Heat is nothing but an highly rapid Motion of sulphureous Parts: Nor is it to be doubted but this hot intestine Commotion of the Parts of the Blood is increased, by an accelerated Circulation, which is discovered by the Vehemence, the Frequency, and the Fullness of the Pulse: For when the Pulse is frequent, vehement, and full, the Blood must necessarily be moved briskly through the Vessels of the Body, and the Heat be sensibly increased. Nor is it to be doubted, that not only in a sound State, by an increased Vehemence and Largeness of the Pulse, in Consequence of a violent Motion of the Body, or Commotion of Mind, the Circulation of the Blood, and, consequently, the Heat is increased, but, also, in an unsound State, and even in Fevers, especially those of the intermittent, tertian, and continual Kind, as, also, those of the burning Kind, and the *Synocha*, the same Species of Pulse must produce a brisker Circulation, and, consequently, an increased Heat of the Blood. But this does not happen universally; nor do I assert, that where-ever there is a preternatural Heat in the Blood, there its Circulation must be increased: For an increased Circulation is not the only Cause of the hot intestine Motion of the Parts of the Blood, since various important Arguments convince me, that several other Causes may concur to throw the minute Particles of the Blood into a violent vertical Motion, even when its Circulation is slow and languid: For it is certain, that not only in malignant, but, also, in several other Fevers, there is a preternatural and intense Heat, where the Pulse is neither vehement, strong, nor large; but only quick, or frequent, small, and even weak; which Species of Pulse by no means discovers a quick Circulation of the Blood through the Heart: Besides, the inflammatory Stagnations of Blood in the Lungs, and other Viscera, which are accompanied with an internal uneasy Heat, a Thirst and Refrigeration of the Extremities, sufficiently evince that all excessive Heat does not proceed from an increased Circulation of the Blood: And, certainly, nothing is more observable in Practice, than that an intolerable Heat preys upon the internal Parts of the Body, when the external Parts are obstructed, contracted, dry, and parched; and that, on the contrary, that Heat is less troublesome, which seizes only the Surface of the Body, or tends towards the external Parts; since this latter Species of Heat indicates a free Circulation of the Blood through the Surface of the Body, whereas the former Species discovers an obstructed or retarded Motion of the Blood through the internal Parts: So that, in Practice, this Difference is to be perpetually observed, that, in an internal Heat, the Danger is always great; whereas, when the Heat is external, there are greater Hopes of the Patient's Recovery.

Besides, it is, also, confirmed by Experience, that all such Things as render the Blood fluid, and invite its Motion and Circulation to the external Parts, so that a gentle Sweat may succeed, which happens under a full and quick Pulse, which is a Proof of the increased Circulation of the Blood, instantaneously extinguish the most uneasy Heat; so that the Physician acts a judicious Part, who, a few Hours before the Paroxysm, disposes the Body to sweat; by which means, the succeeding Paroxysm is always rendered more mild. It, therefore, seems consentaneous to Truth, that, under the intestine Commotion of the Fluids, many Effluvia, of an igneous Nature, are excited, that is, put in a violent Motion, which, if they can be freely discharg'd through the Excretories of the Body, greatly lessen the Cause

of the Heat. But if these igneous Effluvia remain in the Habit, which happens by a Diminution of the Circulation, and an Obstruction of Perspiration, they must, by returning into the Blood, redouble, and greatly increase, the Heat: For we find, that the Heat excited on the Surface of the Body, proceeds more from the reflected intestine Motion of the subtil Parts, than from the Circulation of the Blood. It is, therefore, certain, that the Essence of Heat consists in an highly quick Motion of sulphureous Parts; and that this Heat becomes violent under every progressive Motion, by an increased Impulse and Attrition on the Vessels and Fibres of the solid Parts: But it by no means follows, that, where the Heat is increased, this should always happen by an increased Circulation, since such an Heat often proceeds from a Retention of the hot Exhalations, and their fresh Repercussions on the same Object; as is sufficiently obvious, in violent Inflammations, and hectic Heats.

But they who derive the Origin of febrile Heat from an increased Circulation of the Blood, build their Hypotheses on this Foundation, that a quick Pulse, which is the pathognomic Sign, and inseparable Companion of a Fever, is an infallible Proof of an increased Circulation of the Blood; and that there is a great Difference between a quick and a frequent Pulse, which are not to be confounded by Practitioners, since the latter is rather found in a natural State, and in young Persons, upon an increased Agitation, either of Body or Mind, upon drinking Wine, as, also, in a Palpitation of the Heart, and an Asthma; and, consequently, cannot be the genuine Sign of a Fever; whereas a quick Pulse is never absent from a Fever.

This Doctrine I have investigated with the more Accuracy, not only that we might be the more certain, with respect to the Origin of febrile Heat; but, also, that, knowing the Nature of the Pulses exactly, we might be able to form a Judgment, with respect to a Controversy long agitated among celebrated Physicians, Whether a frequent, rather than a quick Pulse, is the essential Mark of a febrile Commotion. See PULSUS.

Having already treated of the Causes of the Horror, Rigor, and Cold, which are always observed in Fevers, and generally precede them; having, also, explained the Nature and Origin of febrile Heat; and demonstrated the Reciprocation of two Kinds of Motions in Fevers, one of which tends from the external Parts to the Centre, and the other from the Centre to the external Parts; we now come briefly to inquire, whether these two Motions depend upon merely physical, or on moral in Conjunction with physical Causes; as, also, what End they answer, and for what Purposes they are destined. In order to answer the first Part of this Question, it is to be observed, that the Mind, though incorporeal, has, nevertheless, in thinking and reasoning, a powerful Influence on the vital Principle, or the Motion of the animal Spirits, which it either increases, diminishes, or variously determines. As this was never denied by any Person who knew the Powers of the Passions and Imagination, and in what manner they change not only the Motion and Crasis of the Fluids, but, also, the Configuration of the Solids; so it is not to be doubted, but a certain febrile Commotion may be excited by Causes merely of an intentional and moral Nature. But it is principally to be determined whether a Fever is not most frequently produced by Causes merely physical, acting without any Morality, and without any spontaneous Direction of such an increased febrile Motion. The first who asserted moral intentional Causes which tend to a certain End, and which are only on the Presentation of a certain Object, received into the internal Agent, or *Archæus*, was *Helmont*, in *Lib. de Morborum Ortu & Febribus*; where he preposterously attempts to reduce the physical Causes of Diseases to the Class of moral Causes. But I was always of Opinion, that where known Causes, and Explications by sensible, obvious, and physical Matters, are or can be found, and where Phenomena can be accounted for from the Properties of Bodies, we are never to have recourse to unknown or incorporeal Qualities in them; for it is to be observed, that the Ancients carefully distinguished the Effects of Nature from the Operations of the Mind; for they never call the Mind the *Curer of Diseases*, which, however, they affirm concerning Nature.

Among the Ancients, Nature was said to be the Cause and Principle of all the Motions of the Body: But they called the Mind the *Source and Principle of Knowledge and Perception*: Whereas Nature is, by *Hippocrates*, pronounced, absolutely without Knowledge and Intelligence. With respect to this, there is a memorable Passage in *Caelius Aurelianus*, *Lib. 1. de Passionibus acutis*, in which he mentions *Asclepiades*, who called the Soul *A Collection of the Senses*; and affirmed, that in the human Body, all things happened necessarily; and every Phenomenon had its respective Cause; that Nature was no more than the Body, or its Motion; and that she was capable not only of being beneficial, but, also, of being injurious; for whether the Soul, which in Men is the Principle of Determination, and

in Brutes the Source of voluntary Motion, is only sensitive, or at once sensitive and rational, yet it can perceive nothing without Ideas, that is, without Motions impressed from external Objects: But these Motions are only received by various Sensories, destined for that End. Where, therefore, the various Sensories are defective, there, also, the Perception and Direction of the Motions are defective; for Touch is absolutely insufficient for accounting for, and understanding, the Nature, Figure, Motion, noxious Qualities, and Force of material morbid Causes: Hence, also, it is easily understood, that in Diseases the particular Direction of the Motions corresponding to the Nature of the morbid Cause can by no means be received by the Soul.

It is indeed true, that Nature is highly observant of Number, Order, Time, and Place, as is obvious in the Formation, Nutrition, and Conformation of the Body, the Cure of Diseases, and the carrying on of the Excretions. But this happens not by any Intelligence of the Things with which she acts; and an arbitrary Power of performing particular Motions, or of directing them to a particular End, of which she is entirely ignorant: But rather those Effects directed to a certain End, are produced alone, by mechanic Laws, and the Influence of Bodies acting and re-acting on each other, under a certain Measure, Degree, and Proportion; which is obvious from this; that these natural Motions may be at Pleasure suspended, increased, or diminished, by mere corporeal Actions. Besides, we have a manifest Instance of a regular and organic Structure in Vegetables, the Fabric of which expressing great Order and Art, does not depend upon any intelligent Faculty, but on a merely necessary Efficacy of Motion, though not without Order. But, without insisting any longer on this, we shall only observe, that it is of great Importance in Medicine, not to confound those Effects of Diseases, which flow from merely necessary Causes, with those which have, in Conjunction with them, a certain free and immaterial Principle of Action, as is obvious in the Passions of the Mind, where there is a great Difference between the Mind and the Disease, since the Disease is only called that, to the Production of which merely corporeal Causes concur; whilst a Passion of the Mind is said to be produced, when the Mind labours under any Disorder, though it often produces a morbid Effect of the Body.

From what has been said we conclude, that a Fever is not to be called *salutary*, because Nature knows the internal Matter to be peccant, and for that Reason endeavours at certain Times and Places to eliminate it from the Body, according to the different Quality of its Peccancy, in a certain Degree and Proportion. This may be granted, with respect to the Mind; when put in a Passion, upon the Presentation of some external Object of the disagreeable Kind; but it cannot be applied to Motions merely mechanical: For as a Passion of the Mind is different from a Disease, so, also, Anger is different from a Fever; but every Fever does not suppose an immaterial and ideal Act or Perception of the Mind. A Fever cannot, therefore, be properly called a salutary and useful Thing, excited for a good End, since Nature, and even the sensitive Soul, is absolutely ignorant of the Condition of the morbid Causes, the Ways, Places, and Ends intended by Nature, which are internal. A Fever, therefore, is not, in my Opinion, to be called *A Motion in itself salutary*, neither with respect to its Principle, or efficient Cause, nor with respect to its End or Effect; because it is often hostile, and even fatal, to human Nature; but only because it sometimes, by Accident, produces a salutary Effect. But to illustrate this by an Example: Thus the strong spasmodic Constriction of the Coats of the Stomach; or Intestines, by an Emetic or Purgatives, is not in itself a good and salutary thing, since it is plainly preternatural, and, consequently, morbid, and the Source of violent Symptoms; yet, as it removes the impure, viscid, and corrupted Sordes from these Parts, it does, for that very Reason, produce a salutary Effect. Thus, also, Spasms of the internal Parts, which generally produce spontaneous Hæmorrhages, are not of themselves good, because they sometimes excite mortal Hæmorrhages; but at other times, when the Blood is redundant, they accidentally produce this Effect in a salutary manner. The same holds true of a Fever, which, considered in itself, can neither be said to be useful nor salutary, since Half of Mankind are destroyed by it: Yet it often produces a salutary Effect, by restoring the impure morbid Body to perfect Health.

We now come to inquire, in a particular manner, in what Patients, and by what means, a Fever proves a salutary Medicine. But we must first of all observe, that the Cause which excites the febrile Commotion in the muscular System, is often not only a Redundance of Blood and Juices, but, also, a Collection of impure excrementitious and viscid Sordes, both in the *Primæ Viæ*, and in the Vessels: Which two Causes generally proceed both from a retarded Circulation of the Blood, and an Infarction and Obstruction of the Emunctories, as

generally

generally happens in burning Fevers, a bilious *Synocha*, a continual Tertian, a catarrhus Fever, and others of a like Nature. In order, therefore, to expel the Cause of these Misfortunes, Nature arms herself not by a kind of Free-will, but from a physical Necessity, stimulated by the Action of the hostile and peccant Matter, whilst the spasmodic Motion, not only of the external and membranaceous Parts, but, also, of the Muscles, and especially of the Heart, is increased by a greater Influx of the Spirits; for both a more strong and intense intestine and progressive circulatory Motion are required, that the redundant and peccant Juices, formed under this double and languid Motion, may be eliminated from the Body, after the Obstructions are resolved, and the Humours prepared and disposed for an Evacuation; for the Antients justly observed, that the Cures performed by Nature, were performed, first, by Maturation and Concoction; then, by Discussion and Rarefaction; and, lastly, by Solution and Excretion. See *Hallerius, in Schol. ad Aphor. Hippocrat.*

By Concoction, or Maturation, they understood that of the pathologic Kind, a fitting of the excrementitious Matter for Excretion, just as physiological Concoction is a fitting of the Substance of the Aliments for Nourishment: For as the crude, coarse, partly immoveable Humours, and such as are not fitted to the Pores of the Emunctories, are morbid, these are first to be prepared for an Evacuation, that is, the viscid Matter is to be incised and absterged; that which is thick is to be rendered fluid, the intemperate and acrimonious Humours are to be tempered and corrected; all which were included in Maturation and Concoction among the Antients, who order, that not crude, but concocted Matter, should be expelled from the Body, both by Nature and Art.

But as the Excretion of the peccant Matter is less commodiously carried on, unless the Passages are previously free, and the Emunctories open, hence the Obstructions are to be resolved, and the stagnant Humours, fixed in the capillary and excretory Vessels, are to be resolved and colligated. After these Ends are obtained, the Excretion of the peccant Matter afterwards succeeds happily.

These are the usual Manners; this the common Method; and this the Order used by Nature, in curing Diseases, or removing morbid Causes from the Body: But she brings about all these Ends by one Instrument, which is Motion.

But the Motion of the Blood is twofold; one, the hot intestine Motion of the sulphureous Parts; the other progressive and circular: Both these Motions are necessary, in order to prepare and, afterwards, eliminate the peccant Matter; for certainly the Circulation of the Blood alone, though intense and brisk, is not sufficient for these Purposes, unless when accompanied with an increased intestine Motion, or an Increase of Heat: And though it cannot be denied, that in Fevers an excessive Heat does Harm to the Body, yet Nature requires both an increased Circulation, and an accelerated, hot, intestine Motion, in order to subdue and remove the febrile Cause; for what more happily dissolves glutinous and viscid Humours than Heat? What is more efficacious or expeditious in removing Obstructions brought on by these Sordes, or in opening the obstructed Emunctories, than hot and fluid Blood? What sooner lessens the Redundance of the Blood and Humours, and renders that which is thick and immoveable, fluid, than Heat? Hence the Antients justly esteemed the febrile Heat necessary to concoct, that is, to incise, attenuate, and prepare the peccant Matter for Evacuation. And that moderate Heat is in itself highly beneficial to the Body, is sufficiently obvious from this, that Men of hot Constitutions, young Persons, and such as use Exercise, and drink warm Liquors, are rarely subject to chronic Disorders, and Obstructions of the Viscera. And this is, also, the Reason why all intermittent Fevers, especially those of the Quartan kind, as *Hippocrates* observes, if they seize in the Summer, are far shorter, and more easily cured, than if they happen in the Autumn and Winter; for the Summer Intermittents often cease spontaneously, in the Month of June, when the Air is most intensely hot. Besides the greater Heat is perceived in the febrile Paroxysms, the sooner the Fever is terminated; and, on the contrary, the more languid and slow the Heat is, the more fixed and radicated is the Cause of the Disorder. In order to destroy this Doctrine, it may be replied, that such Effects are to be ascribed not so much to Heat, as to an increased Circulation of the Blood, which is necessarily productive of Heat. But though an increased Circulation of the Blood cannot happen without an Increase of Heat, yet, as we have already observed, every Heat in the Body is not produced by an accelerated Circulation; since very often, when the Pulse is languid and frequent, and the Extremities cold, the interior Parts are hot, the Tongue dry and black, and the Thirst insatiable: Besides, as the intestine Motion is absolutely different from the Circulation of the Blood; so, also, the former, in a different manner, contributes to Life: Nor, if the

Circulation alone, and Excretion of the useless Parts, were sufficient for the Purposes of Life, would a certain Temperature, Mixture, and Moderation of the Elements of the Blood, and especially of the Sulphur, which is the Foundation of the intestine Motion, be necessary to the Preservation of Life and Health; the asserting the contrary of which is, however, absurd.

Hence the Antients justly asserted, that Life consisted in Heat; that Nature, by means of Heat, attacked the morbid Causes of Disorders; and that there was no Animal, in the Blood and Juices of which there was not some hot Substance; because, without an hot intestine Motion, there can be no Generation, no Life, nor any vital Motion performed: Nor does it hence follow, that there is no Heat which is not perceptible by the Touch; for the Senses are not the only Test by which Heat is to be judged of. The hot intestine Motion may be said to happen, partly with respect to Cold, and partly with respect to its Effect, especially that of the rarefactory Kind; so that, in order to oppose this Doctrine, it is to no purpose to assert, that Fishes may live without Heat: But Heat is absolutely necessary in Animals, to promote the spirituous Quality of the Humours, to preserve them fluid, to keep the Pores open, and to carry on Nutrition and Excretion. Hence *Galen*, in his Treatise *de Usu Partium*, Lib. 14. Cap. 6. calls Heat the first Instrument of Nature: For the same Reason, Nature, in subduing Diseases, uses a strong and preternatural Heat, as is obvious in Fevers; for, by means of Heat, the peccant Matter is not only subdued and attenuated, but, also, rendered fit for Excretion; for though it cannot be denied, that an intense Heat is prejudicial to the Body, by obstructing the Evacuations, especially that by Sweat; yet, if we carefully examine the Matter, we shall find, that Nature does not so much cure Diseases by Evacuation, as by a Dissolution and Rarefaction of the Humours. And if the Matter is to be evacuated, Nature disposes it for Excretion, concocts it, and opens the Pores, which Ends are commodiously answered by Heat; since a Cure consists not so much in the Evacuation, as in the Correction of the morbid Cause: Hence, in my Opinion, those are greatly mistaken, who imagine, that the Matter which, after the Height of the Disease, is evacuated on the critical Days, is the morbid Cause. It is not, however, to be doubted, but the Evacuations in Fevers, carried on in due Quantities, and at proper Times, are excellent Signs that the Patient recovers; and that Nature is superior to the morbid Cause; because they evince, that every Thing is calm in the Body; that a free and equable Circulation of the Blood is restored; and that the spasmodic Contractions of the Parts have ceased: Whence the Evacuations not only of the morbid Matter, but, also, of other excrementitious Humours, generated under the febrile Commotion, are freely carried on: Hence such critical Evacuations are salutary, and, consequently, not to be checked: For it is to be observed, that the morbid Causes of Disorders act principally by Spasms; and, under Spasms, the Circulation of the Blood, and the Excretions, are disturbed. Hence, if the Evacuations are duly carried on, it is a good Sign, that the morbid Cause is subdued; that the morbid Motions are allayed; and that every Thing is again returning to a natural State: For as soon as the Evacuations of the critical, but not of the symptomatic, Kind begin to be duly carried on, in consequence of a proper Circulation of the Blood, the Force of the Disease forthwith remits.

We, therefore, affirm, that a Fever is salutary, because, by the hot intestine Motion, and an increased Impulse of the Blood through all the Vessels, the viscid Crudities are attenuated and dissolved; the Obstructions of the Glands removed; the stagnant Humours rendered fluid; the corrupted and redundant Juices evacuated, and the excessive Humidity of the Habit dissipated: So that a Fever is often an excellent depurating and evacuating Remedy. This Doctrine is confirmed, not only by Authorities, but, also, by Experience. Thus *Hippocrates*, in *Aph. 70. Sect. 5.* informs us, that they who are seized with a Quartan Fever, are not subject to Convulsions; and that they who are afflicted with Convulsions, are freed from their Disorder, upon the Approach of a Quartan; for no Fevers are more salutary than those of the Tertian and Quartan kind, as is universally known: For, if these Fevers are periodical, and not too long continued; or if they happen before the Strength is consumed, or Old-age comes on, they excellently depurate the Blood, powerfully remove Obstructions about the Veins of the Mesentery, and resolve and carry off the coagulated, thick, and viscid Humours, which are the Cause of the Spasms: They, also, dry the too moist Nerves, and corroborate such as are paralytic and lax: Hence arises the Opinion of the common People, that a Quartan produces Strength; and that the Person who is seized with a Tertian or Quartan, will for some Years live free from all Diseases. This Doctrine is, also, confirmed by *Aph. 26. of Sect. 2.* where we are told, that "It is better a Fever should succeed Convulsions, than Convul-

" sions

"fions a Fever." But it is here to be observed, that the Convulsions here meant must arise from a Redundance, and not from a peccant Quality of the Juices; because both the intestine Motion, and the Circulation of the Blood, attenuates and discusses the thick, viscid, and compact Matter lodged in the Brain, Nerves, and *Primæ Viæ*. But *Hallerius*, in his Commentary on the same Aphorism, justly observes, that every Fever does not put an End to Convulsions, but only one of the moderate Kind, which is neither too weak, nor so violent and malignant as to impair the Strength. *Hippocrates*, also, tells us, in *Epidem. Lib. 6.* that a Quartan cures Melancholy, the Epilepsy, the Leprosy, and the Itch: For these terrible Disorders arise almost from the same Cause which produces a Quartan; that is, a Stagnation of impure and viscid Blood, about the abdominal Viscera; and an Infarction and Induration of the Spleen, Liver, and Pancreas. But, as in a Quartan, a due febrile Motion dissolves obstinate and old Obstructions, these violent Disorders are by this means removed. *Langius*, in *Epist. 16. Lib. 1.* informs us, that upon the Crisis of Fevers, especially those of the Quartan kind, he has often seen the Itch spontaneously removed, without the Assistance of any Medicines. As for an Epilepsy, *Hippocrates*, in *Epidem. Lib. 5. T. 6.* informs us, that "Persons labouring under a Quartan are not seized with an Epilepsy; or if they have formerly been subject to it, they are freed from it by a succeeding Quartan." And this Assertion is expressly confirm'd in *Secl. 5. Aph. 20.* where we are told, that those afflicted with a Quartan are not easily subject to Convulsions; and, if they have formerly laboured under them, they are freed from them by a supervening Quartan.

Nor is it a difficult Task to assign a Reason for this; since it is universally agreed upon, that a chronical Epilepsy is produced by Obstructions, and the partly viscid Impurities arising thence, and which Nature, by an universal Spasm principally arising in the Meninges of the Brain, and extending itself through the whole muscular System, endeavours to remove. But such Obstructions, and viscid Humours, hindering the free Circulation of the Blood through the Vessels of the Head, are resolved, discussed, and eliminated, by the Heat and Horror of a Quartan: For certainly, by such a strong Motion of the Fibres, and such an increased Impetus of the Blood, as is observable in febrile Paroxysms, Obstructions are more effectually removed, and stagnant Humours more thoroughly discussed, than by any other Remedy, how valuable soever, whether of the sudorific, or of the aperient and evacuating Kind. It is, also, owing to this, that those who have formerly laboured under a Quartan, are not easily seized with an Epilepsy; because a regular Quartan, by resolving Obstructions, frees the Body from those Causes which produce an Epilepsy.

Besides, a gentle Apoplexy is discussed by a Fever: Thus *Hippocrates*, in *Aph. 5. Secl. 5.* informs us, that if drunken Persons are suddenly depriv'd of their Voice, they die convulsive, unless they are forthwith seiz'd with a Fever. In Drunkenness, when the Body is less perspirable, especially in consequence of a large Quantity of generous Wine, it may happen, that the Head may be filled with too large a Quantity of Blood, which too much distending the Arteries, and Veins of the Plexus Choroideus, intercepts the Passage of the Spirits: But in a Fever, the accelerated Circulation of the Blood not only opens the obstructed Vessels of the Brain, but, also, powerfully discusses the Matter, whether aqueous or viscid, which is stagnant in its Pores.

Hippocrates, also, pronounces a Fever a peculiar Remedy in hypochondriac Disorders, since in *Aph. 40. Secl. 6.* he informs us, that "A Pain of the Hypochondria, without an Inflammation, but arising from Obstructions, Flatulencies, or a cold unequal Temperament, is removed by a supervening Fever." It is perpetually inculcated by *Hippocrates*, that such Disorders as proceed from Obstructions, a viscid Sordes, or Infarctions of the Viscera, are commodiously terminated by a Fever; because in a Fever, the increased intestine, and progressive Motion of the Blood, attenuates, incides, and resolves the immoveable Matter, and disposes and prepares that which is fixed and stagnant, to an Evacuation. I have often observed in Practice, that hysteric Symptoms and Spasms in the abdominal Region of old Women, after a Suppression of the Menses, have been removed by a Fever, accompanied with an effectual Heat and Horror. And if we carefully consider the Thing, we shall find that the spasmodic and febrile Motions, so familiar to hypochondriac Patients, especially in the Autumn and Winter, are useful in carrying off, through the Emunctories of the Body, the excrementitious Sordes, lodged in the Mass of Blood and Humours.

But that a Fever is the salutary Instrument of Nature, by which she frees herself from present Danger, is obvious from this, that the Redundance of Serum, whether pure or tainted with excrementitious, acrid, or bilious Salts, by which Nature is oppressed, is by a strong febrile Motion, excited in the mus-

cular System, commodiously carried through proper Emunctories; as is obvious in catarrhus, rheumatic, and arthritic Fevers, as, also, in an Erysipelas, the Measles, Small-pox, and Purple Fever, where there is always a certain febrile Commotion, and a subsequent salutary and critical Evacuation. Besides nothing is more common than for a Fever of the inflammatory Kind to succeed an Extravasation and Stagnation of the Humours; and this Fever is not, in my Opinion, excited by the arbitrary Determination of the Mind, in order to remove the stagnant Humours tending to Corruption; but it is rather a mechanical and necessary Effect, whilst the peccant Matter, not only by its Redundance, but, also, by its irritating and hostile Quality, stimulates the Fluid which actuates the Membranes and Muscles to an exorbitant Motion, which, being afterwards increased, though preternatural, is nevertheless, if duly managed, of singular Service in discussing and resolving the extravasated Blood: Hence it is obvious, that *Hippocrates*, and the Antients, were in the right, when they asserted, that Nature was the best Curer of Diseases, that is, by an increased and intense Motion, which is of the febrile Kind: Hence, also, it is obvious, that *Aesclepiades*, according to *Celsus*, in *Lib. 3. Cap. 4. de diversis Curationum Generibus*, was in the right, when he said, that, in the Cure of Diseases, he used the Fever as a Remedy. *Sydenham*, also, affirms, that a Fever is the Instrument by which Nature separates the impure from the pure Parts.

From what has been said, we may deduce the following Considerations, very useful in Practice: First, As a Fever is so beneficial to the Body, Physicians ought not in the Beginning to suppress febrile Commotions, because such a Practice, in continual and acute Fevers, such as the Measles and Small-pox, an Erysipelas and the Gout, induces not only immediate Danger, but, also, sometimes Death; and intermittent Fevers, when too soon suppressed, are found from Experience to terminate in violent Obstructions of the Viscera, and slow Fevers resulting thence, an Hætic, a Dropsy, and spasmodic and convulsive Disorders: The whole Skill of a Physician seems to consist in distinguishing those febrile Motions of Nature which may produce a good Effect, and be esteemed salutary and critical, from those which are prejudicial, symptomatic, and pernicious. The former are not to be immediately suppressed; but, if languid, promoted; and, if excessive, moderated: But they ought never to be totally checked, nor too much heightened; since the best Intention the Physician can pursue, is to attack the morbid Cause of these hot Commotions, and lessen it gradually till it is quite removed. It is, therefore, imprudent to abuse the *Peruvian Bark*, which, if rightly used, is a divine Medicine, as, also, Opiates, and Substances possessed of a styptic Quality, in the Cure of Intermittents: Those Physicians, therefore, err, who judging a Fever to be a bad Thing, whereas it is the Effect of a good Cause, immediately endeavour to suppress it; in which they are as faulty as those who immediately suppress the Menses, or Hæmorrhoids, by Astringents; a Practice generally productive of the worst of Symptoms. A Physician is, therefore, never to attempt the Suppression of a Fever; but to try the Removal of its Cause: And when that cannot be commodiously done, he is to moderate the Fever; which, also, tends to prepare and expel the morbid Cause.

From what has been said, 'tis obvious, that all Aliments and Medicines, which refrigerate too much, coagulate the Humours, and which, by their Viscidity, their Acidity, or their anodyne Quality, retard the Motion of the Blood, are so far from being useful in the Cure of Fevers, that they are rather injurious. The Physician ought rather to render the Humours fluid, and promote the Circulation of the Blood through all the Emunctories. Hence *Helmont*, in *Tr. de Febris*, *Cap. 9.* justly affirms, that Diaphoretics are the only specific Remedies for Fevers. Nor are Venesections, Evacuations, and Alteratives, any farther conducive to the Cure of Fevers, than as they promote a free Circulation and Transpiration; for if it is true, that Fevers generally arise from any obstructed Transpiration, and a diminished Circulation of the Blood, they must of course be cured by an Increase of the Circulation and Transpiration. It is, also, obvious from what has been said, that Medicines are most commodiously exhibited when Nature is in a Commotion; for, by this means, she the more easily produces the designed Effects. With respect to this, *Helmont*, in *Lib. de Febris*, *Cap. 9.* tells us, that, if on the Day of the Access, and at a proper time, Medicines are exhibited, Fevers are often removed by one Dose. The proper time is, about an Hour before the Paroxysm, on an empty Stomach, that thus the Medicine may be sufficiently actuated; for if the Medicine is exhibited on the Days of Intermision, or long after the Paroxysm is begun, it is used in vain, whilst it is not assisted by Nature, either in actuating, or expelling, the Matter, which is the occasional Cause of the Disorder. Besides, at such times, the Medicine

is rather hurtful than beneficial, because it proves a Stimulus to Nature, when she is inclined to Rest.

From what has been said, we, also, learn, that it is a bad Sign, when a violent Cause, or Obstruction, is present, if the Fever is slow or slight, or if the febrile Motion does not correspond to the Cause. Hence *Hippocrates*, in *Aphor.* 40. *Secl.* 4. justly affirms, that it is never a good Sign, when the Body is sometimes hot, and sometimes cold; for this is a Proof, that the Disorder will be long protracted. Hence, also, the Reason is obvious, why in weak Bodies, and those in which the Motions of the Humours towards the external Parts are not sufficiently free, there are no genuine Evacuations, but the Patient is afflicted with Translations and Abscesses, not to be cured without great Difficulty. We, also, observe in Practice, that those Fevers are far worse, and of a more malignant Nature, which do not discover themselves by Heat, a quick Pulse, and Thirst, than those which appear with these Symptoms, tho' excessive. I have, also, observed, that in slow Fevers, the Supervention of an hot Fever with Horror is an excellent Sign of Recovery.

From what has been said, we conclude with *Hippocrates*, in *Epidem. Lib.* 2. that 'tis sometimes the Business of a Physician to excite Fevers; for, says he, in *Epidem.* that which Nature does spontaneously, ought to be done by the Art of the Physician. But in *Aph.* 21. *Secl.* 5. he expressly advises the exciting of such a Fever; "For, says he, sometimes in a Tetanus without an Ulcer, in young and fleshy Persons, a pouring on of cold Water recalls the Heat, and that Heat resolves the Distemper." He, also, confirms this Method of Cure in *Lib.* 3. *de Morb.* in the following manner: "Pour a large Quantity of cold Water on the Patient; then cover him with warm and thin Cloths, but let Fire be removed; and this Method is to be used both in a Tetanus, and in an Emprosphotonus." For when cold Water is poured upon a young Body in the Middle of the Summer, the Pores and Fibres are seized with a Rigor and Horror, and the Blood is repelled to the internal Parts; and thus, stimulating the Muscles of the Heart, it excites violent Motions, which are highly beneficial in removing the Causes of chronical Disorders; for, as *Hippocrates* in *Lib.* 2. *de Morb. Secl.* 5. affirms, a greater or slighter Fever always succeeds a Rigor. Without finding Fault with this Method, we shall only observe, that it is far safer by powerful Medicines, which convey Motion to the Blood and Humours, to remove the Causes of chronical Disorders. Hence the Reason is obvious, why Decoctions of the Woods, mineral Waters, Mercurials, Sudorifics, and Diaphoretics, are of such singular Efficacy in removing obstinate chronical Disorders.

Besides, 'tis certain from Experience and Observation, that by violent Anger the most obstinate chronical Disorders have sometimes been removed; for which no other Reason can be assigned, than that in Anger, as well as in a Fever, the Blood and Humours are moved with a kind of preternatural Impetus, as is obvious from the Vehemence and Quickness of the Pulse, the Heat of the Body, and the quick Respiration. Thus *Varia*, in *Obs. Med.* 4. *Lib.* 2. informs us, that a certain Man was cured of a Quartan, which would yield to no Medicines, by being put into a violent Passion by his Friends. The same Author, also, informs us, that a Relation of his own, after being convulsed for about six Years, in such a manner, that he could not work, his Hams being contracted, was by a sudden Passion, whilst he endeavoured to heat a Servant, cured of his Misfortune, because, in that Attempt, his Body was so violently exagitated, that the Nerves of his Legs being relaxed, and his Hams softened, he was not only able to walk and stand straight, but, also, remain'd free from his Disorder during the Remainder of his Life. Besides, says the same Author, I knew a Man cured of a Palsy of one Side of the Body, which would yield to no Medicines, by the sole Influence of Dread and Anger exagitating the Body. And in *Paulin's Fascicul. Obs. ad Acad. Nat. Curios. Dec.* 2. *Ann.* 6. annex. we have an Instance of the total Cure of a Palsy produced by Anger alone. *Frederic Hoffmann.*

PYRGITÆ, πυργίται, from πυργός, a Tower. Sparrows, thus called, because they usually build their Nests, and inhabit Towers.

PYRIA, πυρία, or πυριν. Any kind of Heat applied to the Body by way of Fomentation; or, a Fomentation in general.

PYRIASTES. The same as **PROTOGALA**.

PYRIATERION, πυριάτριον. A Laconic Bath, Bagnio, or Sweating-room.

PYRIATOS. A heated Brick.

PYRICAUSTA, πυρικάυσα. Burns, or Scalds.

PYRIEPHTHOS. The same as **PROTOGALA**.

PYRIFORMIS MUSCULUS. This is a small oblong Muscle, of the Figure of a flat Pear, or Pyramid, from whence it has its Name. It is situated almost transversly between the

Os Sacrum and Ischium, being covered and hid, by the first two *Glutæi*.

It is fixed to the inferior lateral Part of the Os Sacrum, by fleshy Fibres, and to the neighbouring Part of the anterior, or concave Side, of that Bone, by three Digitations lying between the anterior Holes. It is, likewise, fixed by a small Insertion to the *Ligamentum Sacro-sciaticum*, and Edge of the great Sinus of the Os Ilium.

From thence it runs transversly towards the Joint of the Hip, its Fibres contracting in Breadth, and end, in a small Tendon, which is inserted in the Middle of the internal Labium of the upper Edge of the great Trochanter, by two or three Branches. The upper Part of this Tendon receives several Fibres from the *Glutæus Medius*; and its lower Part is united to the *Gemellus Superior*, and Tendon of the *Obturator Internus*.

Sometimes there are two *Pyriformes* separated by the *Nervus Sciaticus*.

See the Uses of this Muscle under the Article **QUADRATUS**. *Winslow's Anat.*

PYRIMACHUS, or **PYROMACHUS**, πυρίμαχος. Antimony reduced to a stony Hardness, Copper fused with Sulphur, and thus rendered hard, is by some thus called.

PYRINE, πυρίνη. The Name of a Plaister described by *P. Aegineta*.

PYRIPHLEGES, πυριφλεγής. An Epithet for a Person labouring under an excessive febrile Heat.

PYRISTIRION. The same as **PYRETERION**.

PYRITES. *Offic. Boet.* 516. *Fabr.* 29. *Charit. Foss.* 17. 52. *Aldrov. Mus. Metall.* 570. *Worm.* 39. 129. *Schw.* 388. *Lapis Pyrites.* *Math.* 1381. *Marchasita variæ, seu Pyrites.* *Mer. Pin.* 212. *Marchasita*, *Moderni.* **FIRE-STONES.**

It is found in almost all Mines, being the most fruitful Matrix of almost all Metals, Salts, and Sulphurs; for it is not purely a Stone, but seems to be the most fertile of all Minerals. There are great Varieties of it, with respect to Colour, Figure, Mixture with Metals, Stones, and other Fossils; for it enters in various Proportions the Composition of Iron, Lead, Tin, Silver, Copper and Alum, and, also, that of black Flints, Pit coal, Lime-stones, Chalk-stones, and others. *Dale.*

The *Pyrites* is a kind of Stone, of which Copper is made. The best Sort resembles Copper, and easily emits Sparks of Fire when struck. They burn it in the following manner: They wash it over with Honey, then put it into a gentle Fire of Charcoal, and continue to blow till it becomes red-hot. Others put the Stone, first well washed with Honey, into a great Fire of burning Charcoal; and, when it begins to be red-hot, take it out; and, blowing away the Ashes, wash it over with Honey, and burn it again, till it becomes equally friable in all Parts; for it frequently happens, that the Superficies only is burnt; when it is thus well burnt and dry'd, they lay it aside, to be used as Occasion offers. If it requires Washing, it must be washed in the same manner as *Cadmia*.

The *Pyrites*, whether crude or burnt, is of an heating and absterive Quality. It deterges such things as darken the Sight, and concocts and dissolves Hardnesses. Made into a Plaister with Rosin, it represses Excrecences of the Flesh, by somewhat of an heating join'd with an astringent Quality. Some call it, when burnt, as before described, *Diphriges*. *Dioscor.*

PYRIUS PULVIS. Gunpowder. This is made of Charcoal, Brimstone, and Saltpetre, intimately mixed together, in different Proportions, according as the Maker would have it more or less strong.

When a Spark of Fire drops upon this Mixture, it immediately catches the black Oil in the Charcoal, which, in this Case, may be considered as a kind of Tinder: This sets Fire to the Brimstone, and the Brimstone lays hold on the Acid of the Nitre or Saltpetre, which, expanding itself suddenly with great Violence, bursts through, or carries along with it, whatever opposes it.

The following Account is generally given of the Invention of Gunpowder: That it was first discovered by one *Constantine Anselzen*, a Monk of *Fribourg*, and a Chymist; who, having put a Mixture of Charcoal, Saltpetre, and Brimstone, in a Mortar, and covered it with a Stone, it happened to take Fire, and blew up the Stone; which Accident, occasioning him to make farther Reflections and Experiments, gave Rise to this surprising Invention. But others ascribe *Bartholdus Schwartz* to be the Discoverer, and that it was first used by the *Venetians* about the Year 1380. during their Wars with the *Genoese*.

But this Account is contradicted by others, who tell us, that in the Year 1343. the *Moor*, being besieged by *Alphonfus*, the Eleventh of that Name, King of *Castile*, defended themselves by shooting off a kind of Iron Mortars, which made a Noise like Thunder: And that, in a Sea-fight between the King of *Tunis* and the *Moorish* King of *Seville*, above four hundred Years ago, those of *Tunis* made use of certain Iron Tuns or Barrels, where.

wherewith they threw Thunder-bolts of Fire. To which may be added what *Du Cange* asserts, that Gunpowder is expressly mentioned in the Register of the Chamber of Accounts in *France*, as early as the Year 1338.

However, this is certain, that *Roger Bacon*, one of our Countrymen, and a Frier of *Merton College* in *Oxford*, so famous among the Commonalty for the romantic Story of his Brazen-head, was well acquainted with the Nature and Composition of Gunpowder, at least an hundred and fifty Years before *Schwartz* was born; as appears from his Treatise *de Nullitate Magiæ*, published at *Oxford* in 1216. where Mention is made of both in the following express Terms: "You may raise Thunder and Lightning at Pleasure, says that excellent Frier, by only taking Sulphur, Nitre, and Charcoal, which singly have no Effect; but, mixed together, and confined in a close Place, cause a Noise and Explosion, greater than that of a Clap of Thunder."

But there is Reason to believe, that the Force of Gunpowder was known long before, and discovered by some Nations in very early Ages of the World, though not brought to the great Perfection it is in at present: And it is probable, that these People kept it as a Secret, either for their own Defence, or, perhaps, out of a more generous and humane Principle; that is, for Fear of the Mischief it might do Mankind; or 'tis possible, that the Art may have been lost and recovered again at different Periods of Time.

The *Chinese* pretend to have had the Knowledge of Gunpowder long before the *Europeans*; and it seems very probable they had; for we have an Account in History, that *Bacchus* was drove from the Siege of a Town in *India* by Thunder and Lightning: And we farther read of something of the like Nature happening to *Alexander*, in his *Indian Expedition*. Now, if it be considered, that these two Conquerors penetrated at least as far as the Borders of *China*, it will not seem unlikely, that this Thunder and Lightning was the Effect of Gunpowder, and that the *Chinese* were acquainted with it before the Expedition of *Bacchus*; and this seems still more probable, because the *East-Indies* naturally afford vast Quantities of Nitre, or Saltpetre, without any artificial Preparation.

The Fable of *Salmonus* says, that he attempted to imitate the Thunder and Lightning of *Jupiter*; and that *Jupiter*, for his Insolence, killed him with real Lightning. The Conjecture does not seem far-fetched, if we should suppose *Salmonus* was acquainted with the exploding Property of Nitre, and to have play'd Tricks with it, in order to terrify his Subjects, and keep them in Awe; and the Circumstance of his being killed with real Lightning, seems to confirm this; for it is easy to suppose, that *Salmonus*, not thoroughly understanding the Danger of his artificial Lightning, might accidentally destroy himself therewith; and the People, ignorant of the Cause, might attribute it to *Jupiter*.

PYROLA.

The Characters are;

The Leaves are alternate; the Flower is rosaceous, pentapetalous, shaped like a Hat, with a recurved Pistil, and disposed in a Spike; the Fruit is roundish, striated, umbilicated, quinqucapular, and full of small Seeds.

Boerhaave mentions two Species of *Pyrola*; which are,

1. *Pyrola*; rotundifolia; major. *C. B. P.* 191. *Tourn. Inst.* 256. *Boerb. Ind. A.* 278. *Pyrola*. *Offic.* *J. B.* 3. 94. *Raii Hist.* 2. 1223. *Synop.* 3. 363. *Ger.* 330. *Emac.* 408. *Pyrola nostras vulgaris*. *Park. Theat.* 508. WINTER GREEN.

The Leaves of Winter Green do somewhat resemble those of the Pear-tree, but are hardly so large; they grow on Footstalks, two or three Inches long, smooth, and of a firm Texture. The Stalks grow to be about a Foot high, bearing on their Tops several small five-leaved white Flowers, having a few Stamina in the Middle, growing one above another in a loose Spike, which are succeeded by cornered Seed-vessels full of very small Seed; the Root is small, slender, and fibrous. It grows in Woods, in divers Parts of *England*, both north and west, and flowers in *July*.

The Leaves, which are the only Part used, and that not often, are cooling and drying, and a good Vulnerary, both for inward and outward Wounds and Hemorrhages, Ulcers in the Kidneys or Bladder, as, also, against making bloody Water, and the Excess of the Catamenia. *Miller's Bot. Off.*

2. *Pyrola*; rotundifolia; minor. *C. B. P.* 191. *Boerb. Ind. alt. Plant.*

Besides the foregoing Species of *Pyrola*, *Dale* mentions the following;

Pyrola altera. *Offic.* *Pyrola folio mucronato serrato*. *C. B. P.* 181. *Raii Synop.* 3. 363. *Tourn. Inst.* 256. *Pyrola folio*

* *Galen*, on this Place, supposes, that by *πυρρός*, here *Hippocrates* is to be understood of all the Colours between pale and yellow, which have any Mixture of White or Red; such as the *ἀσπρόλευκός*, *ερυθρόλευκος*, or *ξανθόλευκος*; since the Sands, or other Substances which subside in Urine, are varied, according to the Colour or Quality of the Blood.

serrato. *J. B.* 3. 536. *Raii Hist.* 2. 1233. *Pyrola tenerior*. *Park. Theat.* 509. *Pyrola secunda tenerior Clusii*. *Ger. Emac.* 408. SMALLER WINTER GREEN.

It is found in Woods, but it is somewhat scarce, and flowers in *June*. The Herb, which is of Use in Medicine, agrees in Virtues with the *Pyrola*; rotundifolia; major. *Dale*.

PYRONOMIA. The Art of regulating Fire in chymical Operations.

PYROPHAGUS. A Person who has the Art of swallowing Fire; a Trick very frequent among Mountebanks.

PYROPUS. A Ruby, or Carbuncle. It has some other Significations, which are foreign to Medicine.

PYROS, πυρός. Wheat.

PYROSIS, πυρσις, from πῦρ, Fire. An intense Redness and Heat in the Face, such as happens to Persons travelling in excessive hot Weather.

PYROTECHNIA, from πῦρ, Fire, and τέχνη, Art. Chymistry.

PYROTICOS, πυροτικός. Cautic.

PYRRHOCORAX, from πυρρός, red, and κόραξ, a Crow. The red Crow, a Bird of no Use in Medicine.

PYRRHOS, πυρρός, is, by all the Translators, render'd rufus, redish; yet it signifies, also, fulvus, fallow, or a yellow Colour inclining to white, the same which we call flaxen; and is so commonly observed in the Hair of Boys and Youth, before the Years of Manhood. Thus *Galen*, *Lib.* 2. *de Temp.* and *Aristot. Quæst. Nat.* write, that the *Germans*, *Illyrians*, *Dalmatians*, *Scythians*, and those who inhabit cold and humid Countries, have πυρρὰς τρίχας, "yellowish or flaxen Hair." The Difference between the τὸ πυρρὸν and the λευκὸν, the fulvum and the flavum, or the pale and bright yellow, which seem to come nearest their Signification in *English*, is thus stated by *Galen*, *Lib.* 1. *de Cris.* γυντάτω τὴν εὐσιν ἐν τῷ πυρρῷ χρῶμα τῷ ξανθῷ, &c. "The *Pyrrhos* (fulvus) comes very near the *Xanthos* (flavus); but they differ, in that the former is more inclining to Whiteness, and the other to Splendor; for bitter Bile sometimes appears fulva (πυρρὰ) of a palish Yellow; sometimes flava (ξανθὴ) of a bright Yellow; and frequently of a pale Colour (ἀσπρό): For while it is whiter, and more turbid than ordinary, it is of the pale Yellow; but when it begins to brighten up, and be purified, it becomes of a splendid or bright Yellow; for whatever is of an igneous Quality, and sparkles in Bile, renders it of a brighter Yellow (ξανθότερον); and as much as the πυρρὸν (fulvum) is whiter than the ξανθὸν (flavum), so much is the ἀσπρόν (the pallidum, or pale) whiter than the πυρρόν. And, again, as much as the ξανθὸν is less white than the πυρρόν, so much is the ἐρυθρόν (erythron, red) less white than the ξανθόν." From hence we may infer, that the Colours signified by the Words rufus and fulvus, both comprehended under the Greek πυρρὸς, are a Mean between the flavus, ξανθός, and the pallidus, or pale, ἀσπρός; as this last is a Mean between the ξανθός, flavus, and the λευκός, albus, the white. The Epithet of fulvus is variously applied by the *Latins*; as to Stars, Gold, (by *Virgil* called, also, flavum, as he uses, also, fulvum for flavum) a Lion, Sand; and by *Hippocrates*, as signified by πυρρὸς, to the Sand discharged in nephritic Affections*. *Πυρρὸν ὕδωρ*, ex *Progn.* is rendered by *Celsus*, *Cap.* 6. *Lib.* 2. *Urina rubra*; and ὑποπυρρὸν, spoken of the Stools, by rufus, *Lib.* 2. *Cap.* 3. And, to mention no more Particulars, *Hippocrates*, *Lib.* 2. περὶ γυναικ. calls the Yolk of an Egg ὡς τὸ πυρρόν.

PYRRHULA. See RUBICILLA.

PYRUS.

The Characters are;

It is taller, and more erect, than the Apple-tree; the End of the Pedicle runs into an oblong Ovary, whose upper Margin becomes a Crown, which is expanded like a Calyx, after the manner of a Star, into five Segments, and is hollow in the Centre; the Flower growing on the Ovary has five Petals, expanded like a Rose, and arising from the Interstices of the Segments of the Crown; it is, also, furnished with twenty, or more, Stamina, which, too, arise from the Edge of the Calyx; from the Centre of the upper Part of the Ovary are produced five Tubes, which terminate in a scabrous, orbicular Apex; and the Ovary itself becomes an oblong, turbinated, quinqucapular, fleshy, and umbilicated Fruit.

Boerhaave mentions but one Sort of *Pyrus*; which is,

Pyrus; sativa. *C. B. P.* 439. *Boerb. Ind. A.* 2. 247. *Tourn. Inst.* 628. *Park. Theat.* 1500. *Raii Synop.* 3. 452. *Pyrus*. *Offic.* *Raii Hist.* 2. 1450. *Ger.* 1267. *Emac.* 1455. *J. B.* 1. 35. THE PEAR TREE.

This is a Tree very well known to every Body, and of which there are several Kinds and Varieties cultivated in Gardens.

P Y U

The Fruit is generally cooling and restraining; but as I know not of any medicinal Use they are put to, I shall forbear saying any more about them. *Miller's Bot. Off.*

PYTAHAIA. The Name of an *Indian Tree*, which grows in rocky Soils, bearing a red Fruit as large as an Orange, in Taste like a Pomegranate.

PYTHON. A Serpent celebrated for Sharpness of Sight, large Eyes, and a triple Row of Teeth.

PYULCUM, πυλλκον, from πυον, Pus, and ελω, to draw out. An Instrument for extracting Pus out of deep Sinuses; perhaps a *Canula*.

P Y X

PYXACANTHA. A Name for the *LYCIUM*.

PYXINUM COLLYRIUM. The Name of a *Collyrium* described by *Celsus*, *Lib. 6. Cap. 6. Sect. 25.*

PYXIS. The Name of an *Acopon*, described by *Paulus Aegineta*, *Lib. 7. Cap. 19.*

PYXIS EMPLASTRUM. A Plaster described by *Aetius*, *Tetrabib. 4. Serm. 3. Cap. 14.*

PYXIS, in Anatomy, is the *ACETABULUM*. *Os Pyxidis* is the *Os Occipitis*. It is, also, a Surgeon's Box, divided into Compartments, for containing various Sorts of Salves, or Unguents.

Q.

Q U A

Q. For the Signification of this Letter in the Chymical Alphabet, see *Alphabetum Chymicum*. **Q** or **q**. in Prescriptions, imports Quantity.

QUADRAGESIMUS DIES. The fortieth Day. The Antients fixed upon this Day as the last to which acute Distempers could extend; calling all those chronical, which continued longer. I have, however, seen an acute Disorder continue sixty Days.

QUADRANS. The fourth Part of a Pound, that is, three Ounces.

QUADRANTAL. The same as *AMPHORA*.

QUADRATUS imports plump. But *Quadratus* is the Name of several Muscles. Thus there is the *Quadratus Genæ*, see *CAPUT*. And the *Pronator Quadratus* of the *Ulna*, and *Radius*. See *PRONATOR*.

QUADRATUS FEMORIS. This is a small flat fleshy Muscle, of the Figure of an oblong Square, from whence it has its Name. It is situated transversely between the Tuberosity of the Ischium and the great Trochanter.

It is fixed by one Extremity along that obtuse Line which runs from under the Acetabulum toward the lower Part of the Tuberosity of the Ischium; from thence it runs directly toward the great Trochanter, and is inserted in almost all the lower Half of the oblong Eminence in that Apophysis, but principally in the small Riling, or Tuberosity, in the middle of that Eminence.

This Muscle, the *Pyriformis*, and *Gemelli*, called, also, by the common Name of *Quadrigemini*, are Congeneres in their Uses; and these have been confined by Anatomists to the Rotation of the *Os Femoris* about its Axis from before outwards: But this Use they cannot have, except when we stand, or lie at full Length: For, in sitting, or when the Thigh is bent in any other Posture, they carry the Thigh outward, or separate the two Thighs from each other, when bent.

All the four co-operate in these two Uses, of Rotation and Abduction; but they co-operate equally or unequally, according to the different Degrees of the Extension or Flexion of the Thigh. For Instance, when we stand strait up, they all perform the Rotation equally; but if the Thigh be then carried a little forward, the *Pyriformis* is more in Action than the *Quadratus*; and if the Thigh be carried backwards, the *Quadratus* acts most.

These Muscles, by means of their Adhesion to the orbicular Ligament of the Joint of the Hip, may, likewise, serve to hinder that Ligament from being squeezed between the Bones, in the different Motions of the Thigh.

QUADRATUS LUMBORUM, SIVE LUMBARIS EXTERNUS.

This is a small, oblong, flat Muscle, irregularly squared, narrower at its upper than at its lower Part, lying along the Sides of the Vertebrae Lumborum, between the last false Rib and the *Os Ilium*.

It is fixed below to the external Labium of almost all the posterior Half of the *Crista Ossis Ilium*, to the *Ligamentum Sacro-Iliacum*, and a little to the *Os Sacrum*, by a fleshy Plane, the Fibres whereof run obliquely backward.

From thence it runs up between the *Sacro-Lumbaris* and *Psoas*, by both which it is partly hid, and is inserted in the Extremities of all the transverse Apophyses of the Loins by oblique tendinous Digitations. It is, likewise, fixed by a broad Insertion, in the twelfth Rib, on the Inside of the Ligament

that lies between it and the *Longissimus Dorsi*, by which that Rib is connected to the first Vertebra of the Loins.

I have observed, likewise, a small *Lumbaris Externus* adhering very closely to the back Side of the *Quadratus*, and fixed by tendinous Digitations to the Extremities of the second, third, and fourth transverse Apophyses of the Loins; from thence its fleshy Fibres run up obliquely over the *Quadratus*, and then mix with it at its Insertion in the last false Rib.

The *Quadratus Lumborum*, and *Psoas Parvus*, are of the same Use to the Vertebrae of the Loins, as the *Scaleni* to those of the Neck; when both *Quadrati* act, they keep the Lumbar Pillar strait, that is, so as not to incline to either Side; and then they may assist the *Recti* of the Abdomen in the Inflections forward, and the superior Portions of the *Obliqui* in lateral Inflections.

They may, likewise, serve to support the Haunches alternately in walking; and, in standing on one Foot, the *Quadratus* of the opposite Side may support the Haunch on that Side, in which Action they co-operate with the *Transversarii spinales*, and posterior Parts of the *Obliqui Abdominis*. *Winflow's Anatomy.*

QUADRIFOLIUM. A Name for the *Trifolium*; *quadrifolium*; *hortense album*.

QUADRIGEMINI MUSCULI. Four Muscles, which assist in moving the Thigh-bone, are thus call'd; the *Pyriformis*, *Gemellus superior*, *Gemellus inferior*, and *Quadratus*.

QUADRUPES. A Quadruped. That is, an Animal furnished with four Feet.

QUAUHYAC OCUILENSIUM. *Nieremberg*. The Name of a very large *Indian Tree*, bearing Leaves resembling those of the Citron. The Bark is astringent, heating, drying, and of a strong Smell: It restrains a Diarrhoea, and excites a Sweat. The Juice, snuffed up the Nose, causes Sneezing, purges the Head, and thus removes Fevers, and Pains in the Head; for which Reasons, it is preserved in Families, as a popular Remedy. *Raii Hist. Plant.*

QUAMOCLIT.

The Characters are;

The Root is annual; the Stalk voluble, and scandent; the Flower monopetalous, funnel-shaped, and multifid; and the Fruit like that of the *Convolvulus*.

Boerhaave mentions two Sorts of *Quamoclit*; which are,

1. *Quamoclit*; foliis tenuiter incisilis & pennatis. *T. 116. Convolvulus, pennatus, exoticus, varior, Quamoclit. Col. 1. Observ. 72. Jasminum, Millefolii folio. C. B. P. 398.*

2. *Quamoclit*; Americana; folio Hederæ; flore coccineo. *Commel. Rar. 21. Boerb. Ind. alt. Plant.*

The *Hist. Plantarum*, ascribed to *Boerhaave*, informs us, that it is cathartic, like the *Convolvulus*.

QUANDROS. The Name of a white Gem, said to be found in the Brain of a Vultur. It is said to increase Milk in the Breasts; but the Virtues, and the Thing itself, seem to be equally fabulous.

QUANLI. Lead. *Rulandas*.

QUAQUILA. The *COTURNIX*.

QUARTANA FEBRIS. A Quartan, or Ague.

Among the Intermittent Fevers, a Tertian is, both with respect to Violence, and Obstinacy, surpassed by that which seizes every fourth Day, with two entire Days of Intermision, and is called a Quartan Fever.

This Disorder generally, in the Afternoon, about Four or Five o' Clock, and sometimes sooner, or later, seizes the Patient with a considerable Languor of the Body, a Pandiculation, and a heavy Pain of the Head, Back, Loins, and Legs; then the Hands and Feet become cold, the whole Body pale, the Countenance and Nails livid; after which succeeds the Horror and Rigor familiar to this Species of Fever: The Tongue and Lips tremble, the Breathing is difficult, the Præcordia are uneasy, the Body is restless, and the Pulse contracted, hard, and sometimes unequal: All these Symptoms last generally for two or three Hours, during which time, most Patients are coltive; whereas, in some, there is a Stimulus to discharge the Fæces and Urine; and, in others, especially old Persons, there is an Effort to vomit, a real Vomiting, and a Discharge of the Excrements. In many Patients, also, especially those far advanced in Years, the Head is surprisingly disturbed, and such an Alienation of Mind brought on, that the Person speaks many incoherent Things; then succeeds, slowly, a Heat, which though not very intense, is, yet, troublesome, on account of the Dryness of the Skin, with which it is accompanied: Then the Rigor is removed, and the Pulse becomes equal, quicker, and larger: There remains, however, an obtuse Pain of the Head, accompanied with a Vertigo; and, at last, the Skin becomes moderately moist, till, after four or six Hours, the Heat, and other Symptoms, disappear, when the Paroxysm of the Fever is removed. Though the Patient, on the two Days of Intermission, generally gets out of Bed; yet he is afflicted with a certain Sense of Pain in his Limbs and Feet, the Bones of which seem, as it were, to be bruised, or oppressed, with a great Weight. In most Patients there is, also, a Sense of Weight in the Head, and a certain preternatural Uneasiness of Mind. The Urine, also, which, during the Paroxysm, was thin and aqueous, is now thick, and deposits a Sediment.

The Symptoms which appear under the Paroxysm, sufficiently evince, that, in a Quartan Fever, the whole nervous System is affected, and spasmodically constricted; so that the proximate and immediate Cause of this Disorder must, undoubtedly, consist in an universal and violent spasmodic Stricture of the nervous Parts; which, proceeding, principally, from the spinal Marrow, preternaturally affects not only the Coats of the Vessels, but, also, the whole Nerves and Fibres; by which means, the Motion of the Solids and Fluids is greatly disturbed.

The material Cause which throws the nervous Parts into such exorbitant Commotions, was, by the Antients, thought to be an extravasated, putrescent, melancholic Humour: But as in all Fevers, so, also, in a Quartan, there is an active Matter, possessed of a caustic Acrimony, stimulating the internal highly-sensible Parts to spasmodic Contractions: Yet, because this Matter is mixed with the pancreatic Juice, which has somewhat of an acido-viscid Quality, it affords a considerable Respite, is not so soon collected, nor so quickly conveyed from the Primæ Viæ to the Membranes of the spinal Marrow: For when it is in a sufficient Quantity collected in the Primæ Viæ, and successively enters the Mass of Blood, being, at certain stated Periods, conveyed to the Membranes of the Spine of the Back, it excites those febrile Commotions specified under the Article TERTIANA FEBRIS.

If we investigate the Origin of this febrile Matter, we shall find, that it proceeds from a slow Circulation of the Blood through the depuratory and secretory Viscera of the Abdomen, especially the Liver, Spleen, and Pancreas, and a succeeding Infarction and Obstruction of these; for, by this means, the fermentative, gastric, lymphatic, and salival Humours lose their temperate, subtil, and spirituous Quality, and assume a fixed and acid Nature; so that they become less fit for the intimate Dissolution of the Aliments, and the Extraction of the Chyle, but produce a large Quantity of acid and viscid Crudities; and these Crudities, in Process of time, contracting a worse Quality, and other external Cause, inducing Acrimony, concurring, a Quartan Fever is at last produced.

That the languid Circulation of the Blood through the abdominal Vessels, is the Cause of this Disorder, is sufficiently obvious, from this, that Quartan Fevers are most incident to Adults, and those advanced in Years; to Persons of melancholic Habits, and those who have contracted not only a Redundance, but, also, a Spissitude, and Impurity of the Juices, in consequence of a sedentary Life, an Intermission of usual Venesection, coarse unsalutary Food, an excessive Use of acid and spirituous Liquors, a Suppression of usual critical Evacuations of Blood, or immoderate Passions. That the peccant Matter is of a caustic Quality, is certain, from this, that Quartans generally appear in the Autumn, after the acrid Sordes are excluded from the Body by the Heat of the Summer; that they are sometimes terminated by the Itch, or Purples; that they return when these are repelled; that they are removed upon the Eruption of the Small Pox; that they are generated by Tertians; that they terminate in Tertians; and that, like Ter-

tians, they are very epidemic in marshy Places, where the Air is impregnated with a large Quantity of acrid Recrements.

Quartan Fevers are of different Sorts, since some are of the simple, and others of the double Kind. The simple is that already described; but a Quartan is said to be double, when, within four Days, two succeeding Paroxysms happen, in such a manner, that each preserves its proper Type, and peculiar Time of Accession, alternately corresponding to the preceding Paroxysm, and the third Day, only, being totally free from the Fever. This frequently happens when a simple Quartan is preposterously cured, or when any Error in Regimen is committed.

Quartans are, also, either legitimate, or spurious. The former observes its Period of Return, which is the Afternoon, more exactly than any other Species of Fevers; but a spurious Quartan has not a certain Period for its Return, which, however, is generally in the Forenoon. The Heat, also, is greater, and afflicts the Patient more, than the cold Fit.

Sometimes every fourth Day the Paroxysm returns, after previous Pandiculations and Horripilation, but does not very exactly observe its Period; nor, when the Paroxysm abates, does it totally intermit, but is only milder on the intermediate Days, than on that in which the Paroxysm happens: The Heat is, also, preternaturally intense, the Pulse increased, the Appetite languid, the Strength low, the Mouth dry, the Head giddy, the Sleep restless, the Urine red, thick, and with a high-coloured Sediment; for which Reason, it is, by Physicians, called a continual Quartan.

Quartan Fevers are generally epidemical, especially after an excessively hot and dry Summer, in consequence of which, a large Quantity of acrid and bilious Recrements are generated in the Body. An Instance of this is mentioned by Sennertus, in *Lib. 2. Cap. 20.* as happening in the Year 1606. *Bartholine, in Centr. Hist. Anat. 95.* mentions the same as happening in the Year 1652; and I can, from Experience, affirm, that the like happened in the Years 1684, 1719, 1726, and 1728. And because, in consequence of the excessive Heat, large Quantities of cold acedent Liquors are often drank, and the cold Night Air acts upon the Body, the Perspiration of the acrid Sordes is obstructed, and the Blood and Humours inspissated.

Quartan Fevers are epidemical in some Countries, and Parts of the World; such as *Westphalia, Pomerania*, and other Northerly Climates, whose Inhabitants use heavy, coarse, and crude Aliments; for, almost every Autumn, long-protracted Quartans rage very much in these Parts. The same thing happens in marshy Countries, and Places whose Atmosphere is impregnated with noxious Exhalations; in which Tertians are very frequent in the Spring, and Quartans in the Autumn; and the Patients are often subject to Relapses, in both Cases.

Quartans are of different Kinds, according to the Diversity of the Patients they seize; for when they happen to Persons who, in Consequence of a sedentary Life, or the Use of coarse and heavy Aliments, contain a large Quantity of thick Blood, to those afflicted with the hypochondriacal Disorder, or who have long indulged themselves in Grief, they are generally obstinate, and dangerous: For which Reason, great Care, with respect to Regimen, is requisite in the Patient, and great Judgment in the Physician, with respect to Medicines. When Quartans happen in cacoehymical Constitutions, or in Persons where the Matter of the Purples lies latent in the Blood, they are accompanied with more terrible Symptoms, and the Strength is more impaired; the Patient is, also, afflicted with Watching, Alienation of Mind, an Anxiety of the Præcordia, and, at last, the Purples appear; and when these are by any Cause, however slight, repelled, the febrile Paroxysms are increased, and afflict the Patient more violently.

Quartans, in Patients whose Strength is exhausted by old Age, Indisposition, a bad Regimen, or exorbitant Passions, easily degenerate into continual Fevers, which are known from a Languor of the Strength after the Paroxysm, the Frequency of the Pulse, the slow Heat, and the Loss of Appetite; which Symptoms place the Patient in considerable Danger. When Quartans, after hot Summers, seize young and vigorous Persons, the Paroxysms last long, the burning Heat terminates in a profuse Sweat, and the Thirst, and Languor of the Stomach, are greater than in other Patients. As Infants and Children with Reluctance take Medicines, do not observe the Rules of a proper Regimen, catch Cold by throwing the Bed-cloaths off them in the Night, and have not only a lax Habit of Body, fit for retarding Perspiration, but, also, Stomachs fit for collecting Crudities, so they are long afflicted with Quartans, more frequently subject to Relapses than others, or afterwards exposed to the Attacks of other Diseases.

Quartan Fevers are, however, generally pretty safe, and rarely prove mortal, except in old Persons, those whose Strength is exhausted, those of tender Constitutions, or subject to epileptic Fits, or when the Fever has not only been excited, but augmented

augmented, by the Passions of the Mind; or when such a Fault is committed, either by the Patient or Physician, that the Quartan passes into a Quotidian, or some chronical and fatal Disorder.

The Safeness, however, of Quartan Fevers, scarcely atones for their Violence and Obstinacy; for they are generally long protracted, and often prove the Reproach of the Physician, because they elude the Force of his best-chosen Remedies. This principally happens in such Quartans as arise in the Autumn, and continue throughout the Winter; for these are rarely removed till the Vernal Solstice; at which Time, the Pores being opened, and the Juices attenuated, by the Serenity of the Air, they generally disappear spontaneously. Quartan Fevers are, also, highly obstinate, when the Disorder is deeply rooted in the Viscera, especially the Liver, Spleen, and Pancreas; or when the whole Mass of Humours is contaminated; and impure, or the nervous System excessively weak, and disposed not only to conceive, but, also, to cherish such anomalous Motions; and especially when the Patient, by his Voracity, continually collects and increases the Matter of the Fever.

When, on the contrary, a Quartan happens in the Spring; or Summer, it is more easily cured, since the Temperature and Serenity of the Air greatly contribute to its Removal: Quartans, also, arising from irregular Living, or Crudities collected in the *Prima Via*, whilst, at the same Time, the Viscera are sound, as, also, Quartans arising from a Suppression of Transpiration, are easily cured, and often happily removed, by one Vomit, or one Dose of some proper diaphoretic Medicine, exhibited before the Paroxysm: Those Quartans are, also, easily cured, unless through some Fault of the Patient, or Physician, which seize young and vigorous Persons; especially if they rather proceed from Bile, than from an acid and tenacious Humour, which principally happens in such epidemical Quartans as rage in the Summer.

Nor is an anomalous Quartan, which does not retain its Type, returns at uncertain Periods, or passes from the simple to the double Kind, so dangerous as it is commonly thought; for these Circumstances are Signs that the peccant Juices are not very tough, and deeply impacted in the Viscera; but that they are still disposed to Motion, and that Nature makes some Efforts for eliminating the Matter which produces the Disease: Besides, the due Return of the Paroxysms contributes greatly to dissolve the viscid, and discuss the stagnant Humours. So that the more frequently these Paroxysms recur, the sooner the Cause of the Fever is removed, and, by the Assistance of Nature, the Cure perfected by a few proper Medicines.

Though a Quartan has generally no critical Excretion, yet it is sometimes happily terminated, by an Eruption of Pustules, Spots, small Ulcers, and the Itch, all over the Body; as, also, by the hæmorrhoidal Discharge. In Children I have, also, seen Quartans terminate successfully in the Small Pox; and I have found, that pregnant Women, labouring under Quartans, have not got rid of them till after the Delivery; at which Time, the Infants have been affected with the same Disorder.

Quartan Fevers are sometimes highly beneficial, not only in preventing, but, also, in removing other Disorders, those especially of a chronical Kind: For the increased Motion of the Solids and Fluids, under the Paroxysm, attenuates the tough Juices, forces them from their Seats, and greatly contributes to remove those old Obstructions, which are deeply seated in the minute Vessels, Glands, and nervous Parts. Hence the most skillful of the ancient Physicians, such as *Hippocrates*, *Aesclepiades*, *Galen*, and *Gelsus*, affirm, that they looked upon Quartan Fevers as Remedies for some other Disorders; and they are certainly of singular Efficacy in removing hypochondriac Symptoms. *Hippocrates*, in *Lib. 6. Epitom.* highly extols Quartans, as beneficial in Epilepsies and convulsive Motions. Practical Authors have furnished us with Instances, in which convulsive Asthmæ, the Stone, and Gout, have been happily removed by the Course of a Quartan Fever, duly and skillfully treated. *Idus Gellius*, in his *Nat. Hist. Lib. 17. Cap. 12.* informs us, from *Plato*, that Quartan Fevers not only free the Patient from Disorders of the Viscera, but, after their Removal, leave the Body stronger, so that they are not, for the future, so subject to other Disorders, or Relapses into the same. I myself have, also, known many live to a great Age, after Quartan Fevers. Hence we cannot enough admire the Bounty of indulgent Heaven, which has given an incomparable medicinal Virtue to some Diseases seemingly the most destructive of Health.

But when Quartans are protracted too long, the Juices conceive a Decadence; and, if the Humours are thin and bilious, the Purples appear, or the spirituous, raskid, and nutritive Parts, being dissipated, the remaining Fluids become tough, are corrupted, and bring on chronical Disorders. Quartans, ill treated, degenerate into violent and fatal Disorders; such as a Dropsy, an Anasarca, an Ascites, a scorbutic Cachexy, cedematous Tumors, slow and hectic Fevers of the continual

Kind, a dry Asthma, a Jaundice, a Chin-cough in old Persons, comatous Disorders and Hemiplegies; in young Persons, the hypochondriac Disorder; and, in Infants, violent Convulsions, which miserably distort the Spine of the Back, together with other Parts, both in the anterior and posterior Regions of the Body: And, in all these, after Death there is found some conspicuous Fault of the Viscera, especially of the Liver, Spleen, and Pancreas; together with an Infarction, Obstruction, and Corruption of the meseraic Glands.

They who are taken off by a Quartan Fever, die under the Rigor of the cold Fit, and an uncommon Perturbation of Mind. On this Occasion, as I have observed in two Adults, the Violence of the Spasms is so increased, that no Degree of Heat succeeds, whilst Symptoms, plainly resembling those produced by Poison, appear, and, at last, destroy the Patient: And, in Infants, the spasmodic Strictures manifestly degenerate into fatal convulsive Motions.

After a Recovery from a Quartan Fever, the Patient ought, for some Time, carefully to observe a due and proper Regimen; for this Species of Fever easily recurs, and, upon the slightest Occasion, resumes its former Tenor. Those who, having surmounted a Quartan, indulge themselves in Gluttony, and overload their extenuated Bodies with a large Quantity, especially of unsalutary Aliments, easily relapse, in Consequence of a fresh Collection of Crudities in the *Prima Via*. The same Misfortune is incident to those who have their Perspiration obstructed, expose their Bodies to the cold and moist Air, or drink large Quantities of cold Liquors when they are excessively hot: Those, also, who have been long under the Influence of violent Passions, especially excessive Grief, easily relapse into Quartans. It, also, happens, though more rarely, that Quartans, which had ceased upon the Expulsion of the peccant Matter to the Surface of the Body, either under the Appearance of the Itch, Pustules, Ulcers, or Purples, forthwith return, when these are repelled.

THE GENERAL METHOD OF CURE.

In the Cure of a Quartan, the following Intentions are to be pursued.

1. The viscid, acid, and bilious Crudities, gradually conveyed from the *Prima Via* with the Lymph and Chyle to the Blood, and exciting febrile Commotions in the nervous System, are to be corrected, and evacuated, by proper Emunctories.

2. The Circulation of the Blood through the abdominal Viscera, especially those to which the *Vena Portæ* is distributed, is to be rendered free and uninterrupted, whilst the Congestion, Infarction, and Obstruction, are to be removed; or, at least, their Increase prevented.

3. The violent spasmodic Constriction of the nervous System, which is the Cause of the terrible Symptoms, is to be allayed, and mitigated. And,

4. The impaired Strength of the Viscera, Stomach, and nervous Parts, is to be restored; by which means, not only future Paroxysms, but, also, a Relapse, are prevented.

The first of these Intentions is answered by all those Remedies which obtund Acids, incide tough Juices, correct such as are acid, and cleanse the *Prima Via*. Of this Class, the most considerable are, alkaline Medicines, such as the Salts of Plants prepared by Incineration, especially the Salts of Wormwood, and *Carduus Benedictus*: Neutral Salts are, also, excellent, for answering this Intention, especially depurated Sal Ammoniac, the *Terra foliata Tartari*, and the digestive Salt of Sylvius; to which, in order the more effectually to correct the bilious Acrimony, we are to add gentle Absorbents, such as Crabs-eyes, Egg-shells, and Hartshorn, prepared without Fire. But if the Intention is to evacuate these Crudities, the Salts obtained from medicinal Springs, such as those of *Egra*, *Epsom*, and *Sedlitz*, exhibited in a large Dose, or the *Sedlitz Waters* by themselves, eliminate the thickest of them by Stool, whilst tartareous Medicines efficaciously carry off the more subtle salino-sulphureous *Sordes* by Urine. In Quartan Fevers, the *Magnesia Alba* is, also, possessed of a purgative Quality, since, by absorbing the Acid of the *Prima Via*, it is converted into a bitter Salt, resembling that of *Epsom*.

The second Intention is excellently answered by bitter Substances, which, by their fixed balsamic Sulphur, restore the Balsam of the Bile, obtund acid and saline Humours, and procure a certain mild spirituous Quality to the Juices: Such are the bitter Extracts of Fumitory, Wormwood, *Carduus Benedictus*, red Gentian, Marsh Trefoil, and the lesser Centaury; the Essence or Extract of Rhubarb; and the Pilule Balsamicæ, prepared according to the Directions of *Becher*, of well-depurated Aloes, bitter Extracts, resinous, balsamic, and temperate Gums; which, besides their laxative, have, also, an attenuating Quality, especially if they are taken alternately with the above-mentioned Salts. This Intention is, also, answered by a due Use of hot and cold medicinal Waters, in Conjunction with

a proper

a proper Regimen: But if an inveterate Obstruction of the Viscera, especially of the Pancreas, which, in obstinate Quartans, is highly pernicious, cannot be removed by mild Medicines, more penetrating and active Preparations of the mineral Kind are to be used; such as *Mercurius Dulcis*, the *Diaphoreticus Solaris* prepared in the manner directed under *MERCURIUS*, and the *Antiquartanum* of *Riverius*, which is prepared of Mercury, Antimony, and Gold, by frequently abstracting from them Aqua Regia, and then kindling Spirits of Wine upon them; and, among antimonial Preparations, medicinal Regulus of Antimony, the *Panacea* of *Glauber* and *Conerdingius*; as, also, my Sulphur of Antimony, corrected and prepared without a Precipitation with an Acid.

The third Intention, which is to allay the spasmodic Strictures of the nervous System, is answered, first, by antispasmodic nervous Liniments, consisting of human Fat, the Oils of Spike, Lavender, Rue, and Sage, together with *Peruvian* Balsam, applied, with brisk Frictions, to the spinal Marrow. Secondly, By Clysters prepared of nervous, carminative, and antispasmodic Herbs, with the Addition of a sufficient Quantity of demulcent Oils. Thirdly, By Baths of sweet Water, which were, by the Antients, principally used, before the Accession of the Paroxysm. And, fourthly, By Epithems and Liniments prepared of spirituous and aromatic Substances, and applied to the epigastric Region under the Horror and Rigor of the Fever.

The fourth and last Intention of Cure is excellently answered, by all bitter Substances, which are, at the same time, possessed of a certain balsamic and astringent Quality: The most considerable of this Kind are, *Peruvian* Bark, the Barks of Cascarilla, Capers, Tamarisks, and Cinnamon; the Shavings of red Sanders, and the Essences extracted from bitter Plants; which, when quickened with some proper chalybeate Liquor, are highly efficacious. But my antifebrile Electuary, directed in the Article *Tertianæ Febris*, is, of all others, the most effectual.

In Quartans, great Relief is, also, afforded, by applying to the Wrists some Plaisters; such as that to which *Strobelbergerus* gives the Name of *Emplastrum famigeratissimum*: These Plaisters may be prepared of such Substances as, by their aromatic and balsamic, as well as irritating Principle, add a certain Motion and Stimulus to the Fibres, so that they dislodge the Matter deeply impacted in the nervous Parts, and, on the Day of Intermission, render the Circulation of the Blood quicker.

Besides these Remedies against Quartans, I shall subjoin two others, which I formerly found of singular Efficacy in *Westphalia*: The one is a vinous Infusion, which answers all the Intentions of Cure, and of which a large Draught ought to be drank every Morning. It is prepared thus:

Take of the fibrous Roots of black Hellebore, of Polypody of the Oak, and of Sena-leaves, without the Stalks, each one Ounce; of Wormwood, the lesser Centaury, Carduus Benedictus, and Marsh Trefoil, each half a Handful; of the Shavings of Snake-wood, of *Peruvian* Bark, and recent Orange-peel, each three Drams; of the Filings of Steel, and the *Tartarus Tartarizatus*, each half an Ounce: Cut down and bruise all these together, sprinkle them with two Drams of the urinous Spirit of Sal Ammoniac: Mix and infuse in two Quarts of Wine.

The other is the following Powder:

Take of *Peruvian* Bark, three Drams; of medicinal Regulus of Antimony, two Drams; of *Mercurius Dulcis*, (which is not to be triturated with the Powder, on account of the Salts, but only mixed with the Point of a Knife) of the finest Crocus of *Mars*, and Arcanum Duplicatum, each one Dram; and of the Oil of Mint, four Drops: Make up into a Powder, of which half a Dram, or a Dram, may be reduced to the Form of an Electuary, with Rob of Elder, or Julap of Roses, and exhibited every Morning and Evening.

And, certainly, this Powder is of singular Efficacy in a Quartan deeply rooted in the Viscera; but it is only fit for robust Habits, and ought to be accompanied with a due Regimen: For though it sometimes excites a gentle Salivation, which proves uneasy, yet it succeeds so well, as to remove obstinate Quartans.

PRACTICAL CAUTIONS, AND OBSERVATIONS.

Quartan Fevers are so obstinate, that they call for Patience in those who labour under them, and due Expectation in him who undertakes the Cure, especially when they happen in melancholic Constitutions, old Persons, those subject to hypochondriac Disorders, those in whom the Circulation of the Blood

through the meseraic Veins is slow, those whose Viscera are infarcted, or when they happen about the middle of the Autumn; for, in the Cure of these Fevers, the Physician is not to act hastily, or attempt the Relief of the Patient by violent and drastic Medicines, for fear of doing more Harm than Good.

In the Beginning of the Disease, if the Patient is robust, and vigorous, Medicines of a pretty powerful, resolvent, colliquating, and evacuating Quality, are to be used; but when the Disease is of long standing, the Patient tender, and of a delicate Constitution, and a large Quantity of bilious and acrid Recrements are in the Body, the Fever is surprisingly increased by such Medicines, and frequently passes from a simple to a double Quartan, or to a Quotidian: But temperate Substances, rather of the dietetic, than of the pharmaceutic Kind, are to be used in Conjunction with such Things as allay the Spasms of the nervous System.

Every Quartan, however, is not so obstinate as not to yield even to the gentlest Medicines; for I have known many happily cured of this Disorder, only by the Use of a temperate balsamic Elixir, prepared with an aqueous Lixivium of bitter Extracts and Rhubarb, with an Addition of a sufficient Quantity of *Hungarian* Wine: Others have been freed from Quartan Fevers by frequently taking Oil of Tartar per Deliquium, in some proper Liquor, drinking old Rhenish Wine, with or without Bitters, immediately before the Paroxysm, and afterwards using violent Exercise. Some have, also, been cured of Quartans by the daily Use of Baths of sweet Water, and using such a Degree of Exercise as to produce Sweat immediately before the Paroxysm.

But Quartans are most happily and easily cured, when the State of the Weather is favourable, or when the Air is pure, subtil, and rarefied, as it is in the Spring, and serene Summers; for, in such Seasons, long-standing Obstructions of the Viscera are more quickly removed, the Toughness of the Juices more speedily colliquated, and the acrid Sordes more expeditiously eliminated through the open cutaneous Pores, by an equable and constant Perspiration. I have known some who could not possibly be cured of Quartans, till they removed to a more healthy Part, or used another Regimen and Method of Life.

As in all chronic Disorders, so, also, in the Decline of quartan Paroxysms, 'tis expedient to change the Patient's Drink, and exhibit Decoctions prepared of the Roots of Sarsaparilla and Succory, the Herb Carduus Benedictus, Raisins, and Fennel-seeds; and such Decoctions are not only to be drank cold instead of Ale, but, also, warm instead of Tea. In Quartan Fevers 'tis, also, proper to use temperate mineral Waters, such as the *Selteran* Springs; for these, when drank with one half, or a third Part of Wine, produce an highly salutary Effect in diluting the thick Juices, and evacuating the impure Humours by Urine.

We are, also, to take due Care, that the acrid subtil Sordes be continually eliminated by Perspiration. This Effect is to be produced both before and after the Paroxysm, not by actual Sudorifics, but by such Medicines as, by increasing the Tone of the Solids, accelerate the Circulation of the Blood, and by that means promote Sweat. This Intention is excellently answered by violent Exercise, such as Riding, Leaping, or Walking a few Hours before the Paroxysm, by which means I have often known Quartan Fevers removed. Accordingly *Celsus*, in *Lib. 3. Cap. 15.* lays it down as a Maxim, "That, on the Day the Paroxysm is expected, the Patient ought to get out of Bed, use Exercise, and endeavour, if possible, to protract his Exercise till the very Access of the Paroxysm; for, by this means, the Fever is often removed." This Effect I have, also, from numberless Experiments, found to be happily produced by the following Mixture:

Take of the Water of Carduus Benedictus, four Ounces; of Treacle-water, half an Ounce; of the Salt of Carduus Benedictus, one Dram; of diaphoretic Antimony, half a Dram; of the Spirit of Vitriol, between twenty and thirty Drops; and of the Syrup of Carduus Benedictus, two Drams: Mix all together; and, if the *Prima Via* are previously cleansed, Half is to be exhibited three or four Hours before, and the other Half immediately after the Paroxysm.

When the Fever is in the Decline, and, the Heat wearing off, the Body becomes spontaneously moist, we are to take great Care, that the Sweat be not interrupted by external Refrigeration, or drinking cold Liquors. If these Measures are not taken, the Fever is not only longer protracted, but, also, Contractions, and cedematous Swellings, of the Feet generally succeed. But 'tis expedient to promote the Sweat by moderate external Heat, and warm diluting Drinks.

Though Venesection is not directly calculated for removing the Causes of Quartans, yet when there is a Suspicion, that the

Q U A

the Fever is supported by an obstructed Circulation of the Blood through the abdominal Viscera, as in those subject to hysteric and hypochondriac Disorders, and those afflicted with the Hæmorrhoids, or who have a Disposition to that Discharge, a Vein may be opened in the Foot with so great Success, that by one Venesection I have often observed an obstinate Quartan totally removed. As most pregnant Women are generally plethoric, if they are seized with a Quartan, they not only bear, but, also, require Venesection, lest by the intense Motion of the Blood, excited by the febrile Spasms, the Uterus should be stimulated to an Exclusion of the Fœtus before the due time. We are, therefore, carefully to consider the various Stages of Quartans, the Habit and Strength of the Patient, together with the Disposition of the Solids and Fluids, lest, by unseasonable Venesection, the Cure should be render'd more difficult, and the febrile Spasms, during the Paroxysm, increased. It is observable, that the Blood taken from the Veins of Persons labouring under Quartan Fevers is remarkably peccant, and has its Surface covered with a tough, yellow Phlegm; and, according to *Schenckius*, there is, also, a white pituitous Crust of this Kind found in the Veins of Persons who are taken off by Quartans.

Nor in Quartans are Vomits to be used promiscuously, and without Distinction; for when there is a Propensity to vomit, arising from a Collection of crude and viscid Juices in the *Primæ Viæ*, in consequence of excessive Gluttony, it is highly proper, by an Emetic, to evacuate the peccant Matter by the nearest Way, before it enters the Mass of Blood, and affects the nervous System. But it is expedient not to exhibit a Vomit, unless the Viscera are sound, the Stomach and nervous System strong, and the Lungs free from every Disorder. Safe Vomits, and such as are appropriated to this Purpose, are, also, to be used: Of these the best is the Root of Ipecacuanha, which, besides its emetic, has, also, an aromatic and balsamic Quality. And, among Emetics calculated for this Purpose, we are to prefer those prepar'd of Copper, as *Cyprian* and white Vitriol, to antimonial Preparations, because the former, by constricting the bilious and glandular Ducts, not only prevents the farther Afflux of the febrile Matter, but, also, by contracting and stimulating the Fibres, renders them more capable of dislodging the peccant Matter, deeply impacted in the nervous Parts. But antimonial Preparations, and those of Copper, when duly mixed, and, as it were, reduced to a proper Temperament, afford an excellent Medicine, calculated both for cleansing the Stomach, and subduing the Fever.

Though the *Peruvian Bark*, skilfully used, is of singular Efficacy against Quartan Fevers, yet we are not to call in its Assistance, unless the *Primæ Viæ* are duly cleansed, the Plethora removed, and the Viscera sound, and free from Obstructions. It is, also, safer in those bilious Quartans which happen in the Summer, than in such as rage in the Autumn, and are supported by some Disorder of the Viscera, and a tenacious State of the Juices. In this last Case, it is more expedient to use a Decoction of the Bark with Wine, with an Addition of bitter aperient and diaphoretic Substances, such as the Tops of the Lesser Centaury, the Herb Cardus Benedictus, the Roots of red Gentian, and Burnet, together with Salt of Tartar.

In Quartan Fevers it is sometimes expedient to heighten the Virtues of the Bark by an Addition of highly subtle Crocus of Mars, and a volatile urinous Salt. This Medicine, however, never proves hurtful, when exhibited at proper Seasons, in just Quantities, and duly mixed with diaphoretic and resolvent Substances. See *QUINQUINA*.

In order to diminish, or totally put a Stop to the Paroxysms of Quartans, especially such as happen in the Autumn, are obstinate, seize Persons of languid Habits, or are accompanied with Drowsiness, I have found excellent Effects produced by applying to the Wrists Epithems prepared of acrid stimulating and gently vesicating Substances. The Vulgar use other Substances for this Purpose; but as their Smell is too ungrateful, so Epithems of this Kind are most commodiously prepared of Turpentine, Soot, Sal Ammoniac, bruised Spiders, Pepper, and Venice Treacle.

Mineral Waters, especially those of the cold and hot Kinds, in my Opinion, contribute not only to the Prevention, but, also, to the Cure of intermittent Fevers; but we are absolutely to abstain from them immediately before and during the Paroxysm, taking care before the Accession, to have the Water evacuated by proper Emunctories, lest the febrile Motions should, by that means be increased. For Drink, temperate Liquors, as we have already observed, are always to be used.

If in a Quartan Fever the Patient is excessively costive, it is expedient to render his Body soluble, rather by Clysters than internal Medicines. The best Ingredients for Clysters of this Kind are, such Substances as, besides their emollient Quality, are, also, pargoric, and allay the Spasms; such as the Tops of Yarrow, the Flowers of common Chamomile, Elder-flowers, the Flowers of the Lime tree, Cumin-seeds, Broth prepared of Veal, the Yolks of Eggs, and a little Sal Gemmae, some-

Q U E

times, also, some antifebrile, bitter, nervous, and corroborating Substances, are commodiously mixed with such Clysters; for, in *France*, it has been customary, for some Years past, to cure Quartans by frequently injecting Decoctions of *Peruvian Bark* into the Anus. The same Effect is, also, produced by Clysters of other antifebrile Decoctions, such as those of Cardus Benedictus, the Lesser Centaury, Gentian-root, and the Herbs Marjoram, Rosemary, Southern-wood, and Sage. And certainly this Method is very useful in Infants, and such as have Stomachs either naturally weak, or easily subject to Nauseas; only we must observe, that the Body must be rendered soluble by an emollient and saline Clyster, before that of the nervous and corroborating Kind is injected.

The violent Fevers with which Quartans, especially in Persons advanced in Years, are accompanied, are not without great Difficulty mitigated. The principal Relief is, however, to be expected from such Medicines as render the Body soluble, as, also, from bathing the Feet; by which means, the Impetus of the Blood is derived from the Head to the inferior Parts. Among external things, the greatest Relief is afforded by Vinegar of Roses, or that of Rue mixed with Salt and Nitre, poured upon Bread, and applied to the Head.

In order to prevent a Relapse into a Quartan, *Celsus*, in *Lib. 3. Cap. 16.* gives us his Advice in the following manner: "If, says he, a Fever of this Kind is removed, the Patient is "for a long time to remember the usual Day of its Accession, "and on it carefully to guard against Cold, Heat, Crudities, "and Lassitude; for it easily returns, unless the Patient is very "careful of himself for some time after his Recovery." Hence, he ought, especially on the Day in which the Paroxysm used to return, to avoid Northerly Winds, a dense, cold, and moist Air, such as that of low-situated, marshy, and subterraneous Parts, taking care at the same time to preserve Perspiration free and uninterrupted. He is to have a peculiar Care of his Regimen, and guard against eating too much, especially of such Aliments as are of difficult Digestion. He is, also, if possible, to preserve a constant Tranquillity of Mind, and avoid Anger and Dread, by which I have frequently known a Quartan brought on.

Then the Stomach is to be corroborated, and the Digestion assisted by stomachic Elixirs, prepared of bitter and aromatic Substances, which are to be long and frequently used, though in small Quantities, lest the Body, already weakened, should be thrown into a preternatural Heat. But in a particular manner we are to take care, that the crude Juices afterwards generated be gently evacuated by Stool; for which Reason the Patient must frequently use the balsamic Pills, or the cinnabarine Pills, or the *Pilula de Ammoniaco* of *Quercetan*, with which, if the Fever has been suppressed by the Use of *Peruvian Bark*, we are to join the digestive Salt of *Sylvius*: By these measures, not only Relapses, but, also, other more terrible Disorders, and especially slow Fevers, are seasonably prevented. *Hoffman*.

QUARS. A Gall-stone. *Rulandus*.

QUARTARIUS. The fourth Part of a Sextary, containing nearly a quarter of a Pint.

QUARTATIO. A Separation of Gold from Silver, when mixed together, by means of acid Spirits.

QUARTURA. The same as QUARTATIO.

QUASSATIO. A Concussion.

QUATERNARIUS, or QUATERNIO. The Space of four Days.

QUATRIO. The ASTRAGALUS.

QUEBRICUM is, according to some, Arsenic; according to others, Sulphur.

QUELLEM. Original, or Elementary Earth. *Rulandus*.

QUELLES. An ELIXIR.

QUELMEISEL. The German Name for a Tent made of a Piece of Sponge, Gentian, or any other Root, so as to swell, when introduced into a Wound, or Ulcer, and dilate the Orifice.

QUERA-IBA *Brazilensis*. *Maregrav. & Piso*. The Name of a Tree which grows in *Brazil*. The Bark confused and boiled, is effectual for curing Wounds or Ulcers in the Legs, or other Parts.

QUERCERA. See *EPIALOS*.

QUERCUS.

The Characters are;

The Leaves are sinuous, and, as it were, lacinated: The Flower is male, amentaceous, and consists of dense Clusters of male Apices, affixed to a thin long Capillament: The Fruit grows at a remote Distance from the Flower, on the same Tree, is furnished with three Tubes, and grows in a Calyx, consisting of small angular Leaves, and becoming at last squamous: This Fruit becomes an Acorn, whose lower Part is contained in the Calyx, and, under an entire coriaceous Shell, incloses a Kernel which cleaves in two.

Boerhaave

Boerhaave mentions five Species of *Quercus*; which are,

1. *Quercus*; latifolia; mas; quæ brevi pediculo est. *C. B. P.* 419. *Platyphyllos, mas. Lugd.*

The sweet and honeyish Moisture with which its Leaves are often covered, and which the Bees gather with a great deal of Care, does not come from the Air, as People imagine; it is an extravasated Juice, which is poured out upon these Parts, not only of the Oak, but, also, of the Maple, where it makes a kind of Sugar; of the Ash, and of the Larch-tree, where it produces the Manna: In some Seasons the Leaves of the Lime-trees, in the great Alley of the King's Garden, are covered with it, in such a manner, that they look as if they were vernished: The Washings of these Leaves are sweetish, and loosen the Belly. *Martyn's Tournefort.*

2. *Quercus*; latifolia; fœmina. *C. B. P.* 419. *Platyphyllos, fœmina. Lugd.* 2.

3. *Quercus*; cum longo pediculo. *C. B. P.* 420. *Tourn. Inst.* 583. *Boerb. Ind. alt.* 2. 177. *Quercus. Offic. Quercus vulgaris.* Ger. 1156. *Emac.* 1339. *Quercus latifolia.* Park. *Theat.* 1386. *Raii Synop.* 3. 440. *Quercus vulgaris longis Pediculis.* J. B. 1. 70. *Raii Hist.* 2. 1335. THE OAK.

This is a Tree which grows plentifully in England, being one of the largest and most common Trees we have, having smooth, shining, green Leaves, sinuated on both Sides. We have two Sorts, one of which, and the most common, bears its Leaves on short Foot-stalks, and its Fruit or Acorns on long; and, on the contrary, the other has the Fruit on short Foot-stalks, and the Leaves on long.

Of the Oak, the Bark, the Buds, the Acorns, and their Cups, are used; as, also, the Galls, which are Excrecencies caused by Insects, on the Oaks of the Eastern Countries, of which there are divers Sorts, some perfectly round and smooth; some rougher, with several Protuberances; but all, generally, having a round Hole in them.

All the Parts of the Oak are styptic, binding, and useful in all kinds of Fluxes and Bleedings, either inward or outward: The Bark is frequently used in Gargarisms, for the Relaxation of the Uvula; and for sore Mouths and Throats: It is, also, used in restraining Clysters, and Injections against the Prolapsus Uteri, or Ani. The Acorns, beaten to Powder, are frequently taken, by the Vulgar, for Pains in the Side.

The only officinal Preparation is the *Aqua Germinum Quercus.* *Miller's Bot. Off.*

4. *Quercus*; pedem vix superans. *C. B. P.* 420. *Robur.* VII. *sive Quercus*; pumila. *Clus. H.* 19. *Descript.* VI:

5. *Quercus*; parva; sive Phagus Græcorum, & Esculus Phili. *C. B. P.* 420. *Raii Hist.* 2. 1386. *Tourn. Inst.* 583. *Boerb. Ind. alt.* 2. 177. *Phagus Esculus. Offic. Phagus sive Esculus.* Park. *Theat.* 1386. *Phagus vel Esculus.* J. B. 1. 2. 74. ESCULENT, or SWEET OAK.

It grows in Greece and Dalmatia, and the Bark, Leaves, Acorns, and their Cups or Calyces, are in Use, and agree in Virtues with those of the common Oak.

Besides the foregoing Species of *Quercus*, *Dale* mentions the two following; the first is the *Cerrus*, or *Helm Oak.* See *ÆGILOPS.*

The second is the,

- ROBUR. Offic. Robur tertia Clusii.* J. B. 1. 2. 76. *Raii Hist.* 2. 1386. *Robur cum Galla majore rugosa.* Park. *Theat.* 1386. *Quercus Gallam exiguae nucis magnitudine ferens.* *C. B. P.* 420. *Tourn. Inst.* 583. THE GALL-OAK.

It grows in Pannonia and Istria. The Galls are used in Medicine.

With respect to Galls, there are several Sorts: The first and best is termed the *Alleppe Nut*, or *Galla Spinosa*; the second is white; the third, smooth and round; the fourth, of an irregular Figure; and the fifth, has a kind of Crown. All these Galls are owing to Insects, which first prick the Oak-trees, and then lay their Eggs in the Wound: These Eggs swell with the Excrecence, and first turn to Worms; then to Flies, which, having perforated the Galls, make their Escape. And as some Eggs are unfruitful, and remain in the Gall, they are observed to yield a volatile Salt.

Galls are very astringent, and are by some given inwardly in Dysenteries: They have likewise been recommended in intermitting Fevers; but the Foundation of their febrifugous Quality depends on too few Instances to be relied on. *Geoffroy.*

QUERCUS MARINA. See *FUCUS.*

QUERQUEDULA. The Teal: A Species of wild Duck. It is esteemed good for the Wind Colic, when applied to the Belly. *Lemery des Drogues.*

QUERQUERA. The same as *QUERCERA.*

QUIES. Rest. The Effects of which are abundantly explained, under the Article *FINRA.*

QUINGOMBO. The Portuguese Name for a Species of *Aleca*, which grows in Brasil. *Raii Hist. Plant.*

QUINQUEFOLIUM.

The Characters are;

The Root is fibrous and perennial: The Leaves grow by more than Threes, at the Top of the Pedicle, round one Centre: The Calyx is monophyllous, not caducous, and, as it were, octophyllous, or decaphyllous, expanded like a Star, and furnished with very numerous Stamina; proceeding from the Compass of the Base of the Ovary: The Flower is rosaceous, pentapetalous, and more rarely tetrapetalous, the Petals standing round the Base of the Ovary: The Ovary is a feminal Head, involved in a Calyx, hemispherical, and has several Eggs; furnished with a long erected Tube.

Boerhaave mentions eleven Sorts of *Quinquefolium*; which are,

1. *Quinquefolium*; rectum; luteum. *C. B. P.* 325. *Pentaphyllum, sive potius Heptaphyllum, majus, luteum, montanum, flore majore.* M. H. 188.

2. *Quinquefolium*; majus; repens. *C. B. P.* 325. *Tourn. Inst.* 297. *Boerb. Ind. alt.* 40. *Pentaphyllum & Quinquefolium. Offic. Pentaphyllum vulgatissimum.* Park. *Theat.* 398. *Raii Hist.* 1. 611. *Synop.* 3. 255. *Pentaphyllum sive Quinquefolium vulgare repens.* J. B. 1. 397. *Quinquefolium vulgare.* Ger. 836. (*figura transposita*) *Emac.* 987. CINQUEFOIL, or FIVE-FINGER.

The common Cinquefoil, or five-leaved Grass, has a large spreading, thick, woody Root, covered with a dark-brown Bark, and full of small Fibres, sending forth many slender creeping Stalks, which lie on the Ground, emitting small fibrous Roots from the Joints, by which it easily propagates itself; at every Joint grow the Leaves, five set together upon one long Foot-stalk, which are narrow, veiny, serrated about the Edges, the two outermost being the shortest: Amongst these come forth the Flowers, consisting of five round yellow Leaves, with several Stamina in the Middle, set, also, on long Foot-stalks; and after them small, brown, naked Seed: It grows every-where by Hedges and Way-sides, flowering all Summer. The Leaves and Root are used.

They are restraining and drying, and serviceable against all kinds of Fluxes and Hæmorrhages: The Powder of the Root, given to the Quantity of a Dram, two or three times a Day, is said to cure Agues. The same is, also, accounted good against malignant Distempers, and is an Ingredient in *Penice Treacle*: It is frequently used in Gargles for sore Mouths and ulcerated Gums, and to fasten loose Teeth. *Miller's Bot. Off.*

3. *Quinquefolium*; quod Pentaphyllum, seu potius Heptaphyllum; erectum caule rubro; hirsutus. *H. C.*

4. *Quinquefolium*; rectum; floribus subluteis. *C. B. P.*
5. *Quinquefolium*; minus; flore pallidè luteo. *T.* 297.
6. *Quinquefolium*; folio argenteo. *C. B. P.* 325. *Pentaphyllum rectum, foliis profunde scellis, subtus argenteis, flore luteo.* J. B. 2. 398.

7. *Quinquefolium*; minus; repens; luteum. *C. B. P.* 325. *Pentaphyllum; parvum, hirsutum.* J. B. 2. 598.

8. *Quinquefolium*; minus; repens; luteum; flore tetrapetalo. *Boerb. Ind. alt.* 40. *Tormentilla. Offic. Ger.* 840. *Emac.* 992. *Raii Hist.* 1. 617. *Synop.* 3. 257. J. B. 2. 598. *Tormentilla vulgaris.* Park. *Theat.* 394. *Tormentilla sylvestris.* *C. B. P.* 326. *Tourn. Inst.* 298. *TORMENTIL.*

The Root of *Tormentil* is pretty thick and large, for the Bigness of the Plant, frequently crooked and knotty, of a reddish Colour in the Inside, with many small Fibres; the Stalks are long, and very slender, and hardly able to support themselves: It has frequently seven, though sometimes only five, long narrow Leaves growing at a Joint; less than Cinquefoil, and serrated only at the Ends: The Flowers are small and yellow, of four Leaves, with a few Stamina in the Middle: The Seed is small, growing naked on the Calyx. It grows in Woods, and in Commons, and flowers in June and July. The Roots are used.

They are very drying and binding, good for Diarrheas and Dysenteries, especially attended with malignant Fevers; they being, also, accounted alexipharmic: They are serviceable in Hæmorrhages of the Nose, Mouth, or Womb: They fasten loose Teeth, and help the Relaxation of the Uvula. *Miller's Bot. Off.*

9. *Quinquefolium*; album; majus; alterum. *C. B. P.* 325. *Pentaphyllum album.* J. B. 2. 598.

10. *Quinquefolium*; foliis ternis; precedenti simile. *H. C.*
11. *Quinquefolium*; quæ Tormentilla; reptans; alata; foliis profundius serratis. *D. Plot. Raii Syn.* 142. *Boerb. Ind. alt. Plant. Vol.* 1.

QUINQUE FRAGMENTA PRETIOSA. The Fragments of the precious Stones.

These rare Compositions are hardly prepared any other Way than by Chymistry, which sometimes affords us an Opportunity of employing them in Medicine: But it is sufficient, that we have spoken of each of these Stones in its proper Place; to which we refer the Reader. *Lemery des Drogues.*

QUI

QUINQUE-NERVIA. See PLANTAGO.
QUINQUINA.

Cortex Peruvianus, Peruanus, China Chinæ, Quinquina. Offic. *China Chinæ, Cortex Peruvianus, Quinquina, Cortex Cardinalis de Lugo, Cascarilla.* Mont. Exot. 8. *Kina Kina, vel Cortex Peruvianus Officinarum.* Ind. Med. 63. *Arbor febrifuga Peruviana, China Chinæ, & Quinquina, & Gannana peride dicta.* Raii Hist. 2. 1796. *Pulvis febrifugus Peruvianus.* Barthol. Hist. Med. Cent. 5. p. 107. *An Holqua-built, seu Arbor Chilli.* Hein. 50. Cap. 10. THE JESUITS TREE.

It is an Opinion universally received, that every Disease has a Remedy peculiar to itself; and a sick Person can hardly complain to any Man, who will not recommend an infallible Medicine for his Disorder. This Error, which is the genuine Foundation of Quackery, should, if possible, be entirely eradicated out of the Minds of Men; for as the Powers and Effects of Bodies are not in their Natures absolute, so the Qualities of Food and Physic have a Relation to the human Body, on which they operate: Hence Experience teaches us, that the same Medicines may be both prejudicial and serviceable to different Persons labouring under the same Disorder, though administered in the same manner.

Hippocrates long ago inculcated this Doctrine in *Lib. de Art.* 56. "Every one, says he, is not a Judge, what is beneficial and what pernicious; and yet the whole Art of Medicine consists in this Distinction, for those Remedies, which are of Service, are so from the proper Use of them; and those which are of Diservice from the Abuse of them." This Author by no means ascribes to all Medicines, an absolute Power of procuring Health, but only in a certain respect; and that not because they are exhibited in any particular Disorder, but because they are duly and judiciously prescribed, after a thorough Examination into the Patient's Constitution, with the Cause and Nature of the Distemper, having, at the same time, a peculiar regard to the Time, Order, Dose, and Quantity; but when these Cautions are neglected, he declares them noxious. Since, therefore, Medicines are both serviceable and prejudicial, he justly terms Medicine an Art; and pronounces him only a good Physician, who makes this Distinction between the different Effects, and various Operations, of Remedies.

A due Regard to this Doctrine of *Hippocrates* would put an End to many opprobrious Controversies between Men of Learning; whilst some are surprisingly lavish in their Encomiums; and others equally profuse in their Disparagement, of the same Remedy, in the same Disease; whilst they very seldom agree in determining the Power, Effect, and Use, of any Medicine, in this or that Disease. No one can be a Stranger to the different Sentiments, which are entertained of those Medicines, called *heroic*; such as Mercurial Preparations, Antimonial Vomits, Chalybeates, Opiates, drastic purgative Narcotics, and, among chirurgic Remedies, Vescicatories, Fontanels, Setons, and Venesection: But what is still more surprising, they agree no better in their Opinions of the most simple and dietetic Parts of Medicine, such as cold and hot Baths, and the various Cures performed by Milk and Abstinence.

The *Peruvian Bark*, brought into *Europe* about seventy Years ago from *America*, has met with the same Fate: It is wonderful, with what Applause it was at first received; and what Commendations were at first bestowed upon it, as an infallible Remedy against Intermittents: Nor are there wanting, at this Day, some who have it in the highest Esteem. Another Set of Physicians condemn it as unsafe, and even pernicious; and these have still their Followers; and both Parties, in their Writings, appealed to their own Practice: But, for my own Part, I esteem it a good, effectual, and safe Remedy, when properly used, according to the above-mentioned Rule of *Hippocrates*; but hurtful and dangerous, when imprudently or unskillfully given, without any regard to the Constitution of the Patient, the febrile Cause, the Stage of the Disease, and other Circumstances. I have, therefore, made choice of it for the Subject of my present Dissertation, in which I shall first produce the Arguments of the Advocates for the Bark, and then those of their Opponents; next from a rational Account of Fevers, and their Causes, and an Inquiry into the Principles of the Bark, and its manner of operating, I shall shew both its salutary and prejudicial Qualities; and, lastly, answer all Objections.

The *Peruvian Bark*, then, has a great Number of Advocates; for, at its first Appearance in *Europe*, it was known at *Rome*, and sold, by the Jesuits, at an extravagant Price, as a most infallible Febrifuge; and in a little Bill, with Directions for the Use of it, they declared, that this alone, with a preceding Purge, if necessary, would cure even Quartans. *Bartholine*, Cent. 5. Hist. 50. tells us, that Cardinal *de Lugo* had Testimonials of above a thousand Cures performed by this Medicine in the Year 1653, in which simple and double Quartans

QUI

greatly raged; and that *Fonseca* had, by Experience, found it not only innocent, but salutary. *Fr. Redi, de Experim. Nat.* a. 143. says, its Effects are miraculous. And *Tozzi*, in *Comment. in Aph.* 25. Sect. 2. asserts, that Quartans, which had hitherto been esteemed incurable, are now easily and safely cured by the *Peruvian Bark*.

From *Italy* it was conveyed into *France*, and there several times administered with such Success, that *Tagaultius* gave it, both to the King, and Dauphin, more than once, to good Purpose. About the same time it was received in *England*, with almost universal Applause. For *Willis, de Febr.* Cap. 6. expressly says, that of an hundred Patients, who had taken it, scarce one miscarried. To this one may add, the Testimony of Mr. *Boyle*, in *Tr. de Philos. Experim.* who assures us, that he had removed Quartans of a Year's Continuance, by a Dose or two of the Bark, to the Quantity of a Dram. But *Digby*, in *Tr. de Medic. Secret.* most solemnly affirms, that, out of thirty whom he had cured of Quartans, by the Bark, not two relapsed: Adding farther, that a Relapse was rather a Reproach to the Physician, than the Remedy. That great Practitioner *Sydenham*, in *Tract. de Febr.* has not been wanting in his Encomiums on the Bark, and is very particular in his Description of the proper Method of using it. And that it is still in great Repute in *England*, is certain, from the Writings of *Freind, Lister*, and *Moreton*, which last in *Tr. de Febribus*, says, "The *Peruvian Bark* is, by the unanimous Consent of all modern Physicians, an universal Febrifuge, which entirely, speedily, safely, and successfully cures all intermitting Fevers, at any Season of the Year, at every Age, and in every Temperament; so that it is unnecessary for Physicians to rack their Inventions for the Discovery of any other."

By this Time it had gained great Reputation in most Parts of *Europe*. Among the *Swiss*, *Muraltus* greatly extolled it, and in *M. N. C. Dec.* 2. An. IX. Obs. 2. has given Instances of its Efficacy, both in Tertians and Quartans, upon Young and Old, and concludes with these remarkable Words, "It would require a large Volume, to recount the Cures performed by myself, and others, with the Powder of this Bark." The Writings of *Boerhaave* and *Decker* convince us, that it was, and still is, greatly esteemed in *Holland*. *Bohnus*, in *Diff. de minus suspecta Februm Fuga*, and *Bergerus*, *Diff. de Cortice Chinæ ab iniquis Judiciis vindicato*, have, by many solid Arguments, proved the Virtues of it; and that the *Germans* administered it in intermitting Fevers. Nor was it less esteemed by *Waldschmidtus, Dolæus*, and *Zapfius*, who acquired both Fame and Wealth, by an antifebrile Electuary, whose Basis was the Bark: And his Son-in-law *Stroidel* still prescribes it with the same Success.

On the other hand, there have been, and still are, many learned and excellent Physicians, who do not scruple to reproach the Bark with the Title of an *uncertain, dangerous*, and even *pernicious Medicine*. Some, relying upon their own Experience, positively affirm, that it is not only attended with violent Relapses, but new and incurable Diseases, as a Cachexy, cedematous Tumors of the Feet, Dropsies, obstinate Costiveness, Oppression of the Præcordia, hypochondriacal and hysterical Affections, slow and hectic Fevers, accompanied with a Loss of Strength and Appetite, Consumptions, and sometimes Convulsions and Epilepsies in Children. Among its most considerable Antagonists is *Bagliui*, who, *Opp. Lib.* 2. says, that a Tertian will not admit of a Febrifuge, till the fifteenth Day, when it ceases spontaneously; that all Remedies before that Time are useless, if not prejudicial; and that those Physicians acted preposterously, who, by Febrifuges, endeavour, as it were, to check a Fever in its Infancy; for within a few Days it either returns more violently, or is succeeded by Asthmæ, Dropsies, slow Fevers, Consumptions, or some other dangerous Distempers.

Among the *Germans*, *Ettmuller*, *Opp. Tom.* 2. calls it a precarious Remedy, and elsewhere affirms, that it generally produces Costiveness, a Tumor and Hardness of the Abdomen, with tensive Pains; and that when these gradually remit, or are irritated by Purgatives, or the Spirit of Sal Ammoniac, the like Fever returns with a more intense Cold. *Pallilius*, also, in an Epistle to *Bagliui*, informs us, that the *French* give the Bark successfully in Fevers; but that this Practice would be very ridiculous in *Italy*; nor does he advise it till towards the End, for strengthening the Stomach. For more Instances of the noxious Quality of the Bark, see *Blegny, Zodiac. Gall. Med. Phys. An.* 4. *Mens. August.* Anno 5. *Mens. Januar.* and *M. N. C. Dec.* 3. An. 9. Obs. 109. and Cent. 3. And *Stablius* in *Theoria Med.* and *Opusc. Physico-Med.* as, also, *Juncker*, in *Conspect. Medic. Theoret. Pract.* every-where oppose and condemn the Use of the Bark in Fevers. And I must confess, that an improper Use of the Bark is very pernicious, and too often attended with dangerous Relapses, or other severe Distempers; and particularly, that a Quartan is followed by

by the Dropsy; and a Tertian, by hypochondriac Affections, in consequence of the preposterous Use of the Bark.

I cannot, however, agree with those who pronounce the Bark absolutely, and always, prejudicial in Fevers; and, for that Reason, endeavour to discredit it, as ill adapted to their Cure; unfriendly to their happy Terminations; and opposite to the salutary Efforts of Nature: For these imagine, that a Fever is nothing but an exactly methodical Effort of Nature, which, by increasing the Motion of the Solids and Fluids, endeavours to discharge out of the Body, through the proper secretory and excretory Ducts, those Causes, which give Birth to the Disorder: For the Accomplishment of this, say they, the Humours must be put in Motion, and the Passages opened; but Astringents, among which is the Jesuit's Bark, incrassate the Fluids, contract and obstruct the small Canals of the excretory Ducts, and, consequently, retain the morbid Matter; which must necessarily produce Relapses, or other dangerous Distempers.

They further suppose, that Nature's principal Design in Intermittents, is, to diminish a Superfluity of Blood, pernicious to Life, by an Increase of internal Heat, resulting from an Acceleration of the Blood's Circulation, and certain Resolution of it into an excrementitious Serum; and at the same time, by a stronger Impulse, to free the Viscera from Disorders, and Obstructions: And, consequently, that these febrile Motions are, as is were, Remedies and Means, by which Diseases are cured, Pains expelled, and those things which threaten Death, eradicated; so that a Suppression of them must be very dangerous. Besides, that it is an hazardous Attempt to disturb and hinder this wise Intention of Nature, in expelling the noxious Humours through the secretory and excretory Ducts, by inducing a contrary Effect from Astringents; which Practice must be attended with Relapses, severe hypochondriacal and hysterical Affections, slow Fevers, Obstructions of the Viscera, Jaundice, Cachexy, Dropsy, Melancholy, and obstinate Costiveness.

But they rely principally upon this, that the Fomes of a Tertian is seated in the Primæ Viæ, or in the Stomach; and especially in the first small Intestines and adjacent Organs; such as the meseraic Vessels and Glands: But as this Fomes is generally a viscid and tenacious Humour, that it is an Instance of the Wisdom of Nature, that in the Beginning of the Disease, the porous and external Parts should be constricted, that, by this means, the Blood may be forced to the internal Parts, and detained there, till a sufficient Quantity of the serous lymphatic Humour transpires through the Coats and Glands of the Viscera into their Cavities, which serves afterwards partly to colliquate and mollify, and partly to discharge the febrile Matter: Hence they conclude, that all Medicines are pernicious which obstruct these salutary Motions, inspissate the viscid febrile Humour in the Primæ Viæ, and by constricting the excretory Ducts suppress all beneficial Secretions and Excretions, as well by Stool as Urine, and the Pores of the Skin. But the Bark is of this astringent Quality, and therefore to be rejected; and such Remedies are only to be used, as assist Nature, dissolve the febrile Matter; and, by decreasing the Redundancy of the Blood, and promoting Secretions of all kinds, free the Body from the peccant Humour; and not such as dangerously repress it, by a Suppression of the febrile Motions.

Thus the Adversaries of the Bark argue; and, at first Sight, they seem to have some Shew of Reason on their Side: But whether this should positively deter all Physicians from the Use of it, is next to be inquired into. Their whole Argument, then, is founded on the Supposition of some internal Agent, which, upon a previous Knowledge, and subsequent rational Intention, produces and directs the vital Motions, among which are the febrile, as well as the Effects of Remedies, to some certain End. But such a Principle is so far from being useful, either in the Theory or Practice of Physic; that it establishes Errors, or induces Confusion, both in explaining physical Subjects, and discovering or applying Remedies:

He who understands this, will soon determine what Judgment to pass upon the febrile Motions excited by this Principle: They esteem these Motions naturally salutary; whereas they are rather destructive; and accuse wise Nature of Imprudence and Madness. For every Smatterer in Physic knows, that this universal Commotion is attended with spasmodic and convulsive Agitations of the external and nervous Parts, and, consequently, of the whole nervous System; not without a violent Injury to the animal Functions, and Danger of Death: So that every one, who dies of an intermitting Fever, expires with these Symptoms. And indeed, if this Agent could at Pleasure direct the vital Motions, it would be more safe, easy, and rational, without this universal pernicious Spasm, and Stricture of the Body, to conduct this copious Motion of the Blood and Humours, gradually to the Seat of the Distemper. And though I own, that Fevers, especially of the intermitting Kind, in

Bodies full of thick and impure Juices, sometimes; by an extraordinary progressive Motion of the Humours, and an Increase of Heat, prove medicinal, and prevent eminent; chronic, and violent Disorders, arising from Obstructions of the Viscera, yet they are not always accompanied with a Redundance of Blood and Humours; Impurity; or an excessive Crassitude of the Blood and Juices, or an Infarction of the Viscera; much less are these the immediate Causes of Intermittents; and, consequently, this so impetuous Motion of the Solids and Fluids, with a Dissolution of the vital Humours, is quite unnecessary.

As to that Part of their Arguments, which is built upon Nature's Design for the Preservation of the Body, to diminish the Redundance of the Blood, by a dissolatory Resolution of it, by the intestine Motion; we absolutely deny a Redundance of Blood and Humours to be the Cause of the Distemper. For, if this was the Case, plethoric Persons would be most subject to Fevers; and all kinds of Fevers removed by seasonable Venesection. Whereas a Consumption of Blood, and its excrementitious Particles, is the Effect and necessary Consequence of the febrile Heat, which is rather an Enemy, than a Friend, to Nature, as it dissipates and destroys the Strength, upon which the Vigour of the vital Motions depends.

Of no greater Validity is that Way of reasoning, which attributes the Cause of Intermittents to the crude, viscid, tenacious Humours, proceeding principally from Indigestion in the Primæ Viæ, and adjacent Organs; for intermitting Fevers very seldom proceed from an irregular Diet, or bad Digestion: But we may rather deduce the Origin of Tertians from a Quantity of acrimonious bilious Humours in these Parts, especially since we find young, choleric, and passionate Persons, liable to them in very hot Seasons; and that their Vomits and Stools are bilious, and their Urine generally high-coloured, from a copious Mixture of sulphureous and bilious Particles. And though I do not approve of Astringents in all kinds of Fevers, yet I cannot allow, that the Bark, judiciously exhibited, has this Effect; but will rather venture to assert, that it promotes Excretions and Perspiration, as I shall shew more at large hereafter.

I shall now propose my own Theory of Intermittents, and their Generation; by which we shall be the better enabled to judge of the proper Methods of Cure; and the Remedies best adapted to remove them. But I must premise, that Experience convinces us, that neither an irregular Diet, nor bad Digestion, gives Rise to them in one or two Persons, but that they rage epidemically, and spring from a preceding; unusual, long-continued, hot, and dry State of the Air, when we carelessly expose ourselves, about Sun-set, to the North Wind, or cool; moist Breezes, from whence we feel a remarkable Cold and Shivering. For this Reason in low marshy Countries, which abound with Ponds, and stagnating Waters, we see the Inhabitants so frequently afflicted with Intermittents at all Seasons; that they seldom live to any great Age; for an Air which is cold, dense, moist, and replete with Insects, must stop Perspiration. Nor does any, especially an intermitting, catarrhus, arthritic, or rheumatic Fever, attack us, till cuticular Excretion has been lessened or suppressed; nor are we, before that, in Danger of a Relapse; and the Continuance and Violence of the Disorder is proportioned to the Interception and Suppression of this salutary Evacuation.

When there is, therefore, a large Collection of noxious Humours, either from the Temperature and preternatural State of the Air, an Irregularity in the Affections of the Mind, or coarse Diet, which ought to be conveyed through the Pores; and the Transpiration, which should rather be increased, for carrying off such a Quantity of active, vapourish, salino-sulphureous Particles, is, by a Stricture of the nervous and excretory Glands of the Skin, greatly impeded, it necessarily follows, that the Motion of the excrementitious Serum must be directed another Way, that is, to the internal Parts. As this, in catarrhus Fevers, happens to the glandulous Parts of the Nose, Fauces, and Bronchia; in those of the rheumatic and arthritic Kind, to the Membranes of the Muscles, and nerveo-glandulous Ligaments of the Limbs; in Diarrheas to the Coats of the Intestines; so, in Intermittents, the secretory and depuratory Viscera of the Abdomen, as the Liver, Pancreas, Glands, and glandular Coats of the Stomach and Intestines, are affected. But this malignant Humour here collected, vitiates, corrupts, and contaminates the fermentative, lymphatic, salival, and bilious Juices, destined to Digestion and Chylification; for these, whilst lodged in the Cavity of the Duodenum, by their mutual Fermentation, and Commixture with the Crudities of a bad Digestion, contract, by their Continuance, a worse Disposition, and become very prejudicial to the nervous Parts. These depraved Juices being successively conveyed to the Blood, as well through the Pores as Tubes, when they reach the nervous Membranes, encompassing the Brain

and spinal Marrow, excite, by their noxious Quality, an universal Spasm in the Vessels and nervous System, which constitutes the Essence of a Fever.

For a Fever is nothing more, than a Disorder or Effect of a preternatural Affection of the nervous System: For all the subsequent Symptoms, as Pains in the Head and Back, particularly about the first Vertebra of the Loins, convulsive Pains of the Joints, Lassitude, Languor, Cold, Rigor, and Horror, sometimes productive of a Concussion of the whole Body, Anxiety of the Præcordia, and Difficulty of Breathing, with Inquietude, a contracted, quick, small, unequal Pulse, Vomiting, or an Inclination to it, frequent Thirst in the cold Fit, a very great Costiveness, or even a Flux, in some a Stimulus to make Water, and, as I have often observed in old Men, afflicted especially with a Quartan, a Deprivation of the Understanding and Senses, all plainly indicate a violent Disorder of the nervous System. Whilst, therefore, under these Symptoms, by the Stricture of the exterior Parts, the Blood is impelled to the larger Vessels, the Lungs, Head, and Heart, it by its Quantity excites a more violent Pulse, and quicker Systole, in the Muscle of the Heart: Hence the Blood circulates with more Celerity and Strength; the Motion of the Arteries becomes more violent and swift; the Spasms of the Nerves are relaxed by this Increase of Heat, and the Matter which produced them discharged: The Blood is then invited to the Surface of the Body; and the Pores of the Skin, upon this Remission of the Stricture, being opened, a Sweat succeeds.

This seems to me the Origin and Progress of an intermittent Fever; and I shall now endeavour to account for the Return of a Paroxysm, at a particular Distance of Time: This febrile Matter in the Duodenum, composed of vitiated, bilious, lymphatic, and salival Juices, with the Crudities of indigested Food, passes successively to the Blood and nervous System. Then what remains after this Fermentation, if I may so call it, receives fresh Nourishment from the impure Juices flowing out of the Liver, Pancreas, and Glands of the Duodenum: Then, by the extraordinary Increase of Motion in the Paroxysm, the Blood and Serum degenerate into mucid, saline, sulphureous Sordes, which, as they are not entirely dissipated on the intermediate Day, remain within, and increase the Corruption of the lymphatic salival Juices, and of the Bile itself. And give me Leave to make one Observation, which no one, I think, has yet made; which is, that upon the intercalary Day, the Weakness of the Pulse, and the Coldness, rather than Heat of the external Parts, and Skin, sufficiently prove the Transpiration to be incapable of discharging the febrile Matter. And, lastly, it is very probable, that the Tone, Vigour, and Function of this universal, nervous, fibrous, and tubular Emunctory of the Body, the Skin, are very much weakened by so many violent and opposite spasmodic Motions, followed by an excessive Remission; so that the salutary Business of insensible Transpiration, cannot be effectually performed through the whole Course of the Fever, and, of consequence, the Depuration of the Blood and Humours not carried on with proper Vigour: From these Considerations we may reasonably conclude, that the Pores, which is continually receiving fresh Supplies, may, in a certain Space of Time, be collected into a Quantity sufficient to bring on another Fit.

That the Paroxysms return sometimes daily; sometimes on the second, third, or fourth Day, and that at different Hours; and sometimes are double, may be attributed to the Difference of the Matter, either on account of its Quantity, and Activity or Inactivity, and the greater or less Afflux of it to the Primæ Viæ; and likewise the different State of the Viscera, especially the Liver, Spleen, and Pancreas. It is very manifest, that anomalous Quotidians, Tertians, and Quartans, were epidemic in Germany last Year, in consequence of the unusual Length of the Heat and Drought in the Summer and Autumn; and that these Fevers must proceed from the various Disposition of the Humours and Viscera, according to the Variety of the Temperaments and Foods of the Patients.

After this explicit Account of the Cause and Nature of intermitting Fevers, we shall inquire into the Preservatives against them: Amongst these the *Peruvian* Bark claims the Preference, whose Qualities, therefore, and Effects, whether beneficial or noxious, demand a most accurate Examination. First, then, it is an Astringent; for its Powder, either by itself, infused with Water, or mixed with highly rectified Spirit of Wine, constricts the Tongue: This is farther confirmed by a chymical Experiment, while a Solution of it with Vitriol, like all other Astringents, grows as black as Ink: Another of its Principles is a Bitter, of an opening Nature, which is universally allowed to be a proper Remedy for Fevers; since almost all Bitters, such as Wormwood, *Cardus Benedictus*, Fumitory, the lesser Centaury, red Gentian-root, and *Livina* snake-root, and Snake-wood, are allowed to be excellent Febrifuges.

The Bark is, also, a Balsamic, which is very agreeable to Nature; but this Quality shews itself, not so much by the Taste and Smell of the Powder, as by a Water drawn from it by Distillation, or when mixed with Spirit of Wine. Another of its Principles is, a fixed Earth, as appears after Solution and Extraction; and this Principle, though hitherto overlooked, is of great Efficacy in correcting, blunting, and involving the Acrimony of the febrile Matter; particularly of the bilious Kind, in the same manner as earthy Substances, Shells, Mother of Pearl, Sealed Earth, and Coral, operate in removing Fevers. This Simple, therefore, according to *Galen's* Manner of speaking, acts by the Whole of its Substance; and it has, besides, many other Advantages, which are seldom or never found in any other Medicine; for which Reason they are greatly mistaken, who confine the Power of this Remedy over Fevers to Astringency alone.

From this Theory and Pathology of Fevers, and these Qualities of the Remedy, we may soon learn the proper Use of the Bark, in intermitting Fevers, and how to give it to Advantage. We have already proved the material Cause of Intermittents to be, a large Collection of vitiated Bile, and salival Juices, mixt with indigested Aliments, and lodged in the Primæ Viæ, particularly in that winding Intestine the Duodenum; from whence successively passing, in certain Quantities, into the internal Parts, and nervous System, it occasions these spasmodic febrile Motions. Our Intention, therefore, in the Cure should be, to correct and blunt this peccant Matter, procure its Elimination, and prevent its further Discharge from the Glands, and biliary Ducts; and, in my Opinion, if the Bark does not entirely, it will yet, in a great measure, answer these Intentions.

We grant, indeed, that this Febrifuge is not so effectual, when the Primæ Viæ are overcharged with peccant Sordes, especially of the viscid and tenacious Kind; but rather does Harm, by inspissating and rendering them more immovable; and, at the same time, by its astringent Quality, rendering the Patient costive; by which means the febrile Matter is not only retained, but the tensive Pains and Anxieties about the Præcordia are increased, as we have often seen in those, who have been long afflicted with a Quartan, especially old Persons and Children, when they have taken great Quantities of the Bark. In this Case, therefore, it is safer and better to reject this Remedy, or at least, not to use it till such others have been exhibited, as conduce to attenuate, incide, and evacuate by Stool, the thick, viscid, and tenacious Humours. For these Intentions, among Salts, we give the Preference to depurated Sal Ammoniac, the digestive Salt of *Sylvius*, vitriolated Tartar, the Arcanum Duplicatum, *Glauber's* Salt, and *Epsom* Salt. Salts, also, drawn from medicinal Waters, are very efficacious in removing chronic Fevers, such as the *Sedlitz* and *Légran*; half an Ounce, or an Ounce of which, dissolved in a sufficient Quantity of Water, and exhibited as often as the Circumstances of the Patient require, will cleanse the Intestines from the peccant and viscid Sordes. The Power, also, of Bitters is very great, in inciding, deterring, and evacuating the mucid, tenacious, and acid Juices; among the best of these we may reckon the Extracts of the lesser Centaury, red Gentian, and *Cardus Benedictus*, Wormwood, Rhubarb, and Aloes previously corrected and qualified, which, dissolved in a lixivial aqueous Menstruum, and given in Wine or Brandy, on the intercalary Day, are very serviceable. After these, the Bark, with other Remedies assisting its Operation, not only greatly prevents an excessive Afflux of the peccant Humours to the Primæ Viæ, but, also, promotes and facilitates Perspiration.

In like manner, when the Crudities arising from indigested and corrupted Aliments, with the vitiated Bile and salival Juice, nourish a Fever, Reason and Experience convince us, that we ought to purge the Primæ Viæ of these acid, bilious, and corrupted Humours, before we use specific Febrifuges and Corroboratives. For this Purpose, gentle Emetics are proper, or such Medicines as evacuate both upwards and downwards; but we must avoid all strong drastic Purges, and violent Emetics; for these being injurious to the Stomach and nervous Parts, weaken the Patient, and rather increase than diminish the preternatural Commotions. For this Purpose I would recommend an Ounce or two of Manna, with a Grain or two of emetic Tartar, gently dissolved in a sufficient Quantity of Spring-water; which Medicine operates efficaciously enough, both upwards and downwards; and, as I am assured from long Experience, answers the End proposed. After these Measures are duly taken, the Bark may be exhibited with the greater Success.

On the contrary, there are many Species of Fevers, such as the bilious Summer Quartans and Tertians, those of the double and continual Kind, accompanied with severe and cruel Symptoms, which proceed from an imtemperate, sharp, hot, and volatile Bile, generally after a long-continued, hot, and dry Season.

Season. In these Cases, after a few Fits, the Bark, especially in Powder, mixed with absorbent and nitrous Medicines, will be of Service in fixing, correcting, and blunting this Matter, and preventing too copious an Afflux of it to the Intestines: Thus have I known great Advantages produced by plentiful bilious Stools, especially in bilious choleric Constitutions; for the Fever has soon after left them.

As what I have already said, is supported by Experience, so I can, upon the same Foundation, assert, that the Bark supports and promotes Perspiration; which, if not the principal, is certainly a very material Step towards the Cure of intermitting Fevers. For when this salutary Evacuation, as I before observed, is suppressed, and the Sordes, which should be discharged by it, are convey'd to the internal Parts, it gives the first Rise to these Fevers, which bear a Proportion to the Quantity of bilious Sordes retained in the Blood and Humours. Then these Sordes, on account of the inconsiderable Excretion upon the intervening Day, being collected in a greater Quantity, produce a Return of the Fit. Relapses, also, proceed from a Retention of the febrile Matter, which generally happens, when the Patient, too soon after Recovery, exposes himself to a cold humid Air, near stagnating Waters, in low Places, or in vaulted Churches, or to the North Winds. It must, likewise, be attributed to the greater Freedom of cuticular Excretion in the Summer, that Summer Tertians and Quartans are more easily cured, than those of the autumnal Kind; and that Quartans, which have continued all the Autumn, Winter, and Spring, go off spontaneously about the Summer Solstice, without any Medicines. And this will account for some Instances, produced by Authors of undoubted Credit, where obstinate Fevers have been cured by bare Exercise, as Running, Leaping, Riding, or by hot Baths, and drinking Wine till the Pores were opened.

So great is the Use and Necessity of Perspiration in the Cure of Fevers, that it is incumbent on us to shew, that the Bark is endued with a Power to promote it. For its astringent Quality seems adapted to produce a contrary Effect; and it is commonly thought, that it obstructs the Pores, and prevents Perspiration. But we do not ascribe an absolute and positive astringent Quality to the Bark, but rather esteem it a Corroborative, in consequence of its bitter and balsamic Principles.

For though aluminous and vitriolic Substances, Snake-root, and the Roots of Tormentil and Bistort, are very astringent, yet they prove efficacious in intermitting Fevers, if they are seasonably, and after a proper Regimen, exhibited, especially drinking a warm Decoction, or Infusion, after them, and using proper Exercise. But the Power, Nature, and Virtue of Corroboratives are far different, since these act not so much by their terrestrially and astringent, as by their balsamic and bitter Quality; upon the weakened Solids of the Body, by procuring to them Strength, Tone, Vigour, and a motive Faculty, that thus the Motion of all the vital Fluids, which principally depends upon that of the Solids, may be rendered quicker, and more expeditious, through the whole Habit; which always produces a greater Excretion of Matter, by insensible Transpiration; so that Corroboratives are much safer than Astringents. And, indeed, among the Simples of a corroborative and sub-astringent Quality, those are best and most efficacious in curing obstinate and inveterate Disorders, which have somewhat of a balsamic Virtue. Hence Decoctions of the vulnerary Herbs, such as Strawberries, Sanicle, Baum, Agrimony, Scabious, Horehound, Lung-wort, Liver-wort, Spleen-wort, Scolopendrum, Money-wort, Plantain, Yarrow, the Flowers of Daisies, and St. John's-wort, and Tree Lung-wort, have an universal and surprising Effect, not only in the Cure of Wounds, but, also, of inveterate and almost incurable Diseases, such as the Cachexy, Consumption, Scurvy, Jaundice, Spitting of Blood, and sometimes a Quartan, by depurating the Blood, opening the obstructed Viscera, and promoting the languid Excretions; they do not, however, act immediately upon the Fluids, by correcting their Disorders; but rather upon the Solids, by restoring their Tone and Vigour. Nor are we now unacquainted with the Power of Cascarella, which is hotter and less balsamic than the Peruvian Bark, in stopping excessive, and even dysenteric Fluxes; and, when properly applied, is of Service in intermitting, and, likewise, slow Fevers, which proceed from a Fault of the Stomach, or a Weakness of the Digestion.

The Peruvian Bark, then, is so remarkably salutary, that by strengthening the Tone of the Solids, it promotes the Circulation of the Blood, the various Excretions, and particularly, insensible Perspiration. Hence we learn from Experience, that by the Use of it the Strength is restored, Vigour of Body and Mind recovered, lost Appetite revived, with an absolute Cessation of the febrile Paroxysms. Other celebrated Physicians have observed the same remarkable Effects produced by it: Thus Lister, Boerhaave, Sydenham, Decker, Bergerus, Jones, Merton, and D'Aquin, unanimously declare, that the Bark in an extraordinary manner corroborates the Stomach, quickens the

Appetite, increases the languid Heat of the Body, restores the Strength, and not only promotes Perspiration, but, likewise, Urine; and sometimes renders the Body soluble, especially if it be fresh. And, at last, they judiciously add, that all who have found this Effect from the Bark in Fevers, have continued free from the Disorder, and been afflicted with no Symptom or Inconvenience arising from it. But we must take notice, that these salutary Operations are not derived from the increased cuticular Excretion alone. For I have not only often observed, that, after a plentiful and continual Sweat on the intercalary Days, the Fit has nevertheless returned, without any Increase of Strength or Appetite; but am, likewise, convinced from Experience, that strong Sudorifics are not proper and conducive to stop febrile Paroxysms. For there is a great Difference between Sweat, which often proceeds from a Want of Strength, and decayed Tone of the Skin; and an augmented Perspiration resulting from a brisker and quicker Circulation of the Blood through the whole Body: This latter may be distinguished by the Vigour and Equality of the Pulse. And these Effects are not so much produced by Sudorifics, which excite an hot intestine Motion in the Blood, as by those Medicines which restore and corroborate the Tone of the Solids, Heart, and Vessels; among the Number of which Remedies, we may justly reckon the Peruvian Bark.

Nor am I of Opinion, that this Remedy alone does, at all Times and Seasons, by corroborating the Solids, increase the Circulation of the Blood, and Perspiration, in those who labour under Intermittents; but it is very necessary, that the Body should be duly predisposed, the Passages and Tubes of the Excretories open, and not obstructed by Spasms, the Humours thin and fluid, not thick, viscid, and immoveable, and the Virtues of the Remedy entire, and neither blunted nor weakened by the peccant Humours of the *Prima Via*. For the Effect of our Bark is the same as that of well-prepared Chalybeates, which, also, by corroborating the Tone of the Solids, and thus promoting an universal Circulation of the Blood and Humours, are of very great Efficacy in curing inveterate and obstinate Diseases: They do not, however, always produce these happy Effects, but only when the Fluids and Solids are duly disposed to promote the various Excretions. Since, therefore, Chalybeates, by strengthening the Solids, promote Perspiration, the Reason is evident, why chalybeated Flowers of Sal Ammoniac, as, also, those prepared with Blood-stone, duly exhibited either in Powder, or reduced to an Essence with Spirit of Wine, subtile Crocus Martis, and rusty Filings of Steel reduced to a Powder, and properly exhibited, have the same Effect as the Bark, in stopping and even removing febrile Motions; but on the contrary, prove highly prejudicial, when indiscriminately prescribed, without any regard to Time, or the Habit, Constitution, and peculiar Circumstances, of the Patient.

Hence it may possibly seem specious to urge, that, perhaps, it would be safer, and more reputable for a Physician, not only in the Cure of various Diseases, but, also, of Intermittents in particular, to abstain entirely from the Use of such Medicines, as require so exact a Circumspection, to prevent them from being mischievous; and rather commit the principal Business of the Cure to Nature, administering these only, which correct the Intemperance of the Humours, and render them sufficiently moveable and fluid. But this Practice is not always safe and beneficial to the Patient; for Experience teaches us, that Intermittents are sometimes so obstinate and stubborn, that tho' an exact Regimen has been observed, and safe and select Remedies used, which not only correct and dilute, but, also, gently evacuate, and after the Paroxysm excite a Diaphoresis, they yet continue for several Months, and sometimes a whole Year, and longer, emaciate the Body, and entirely exhaust the Strength. Besides, tho' the Violence of the Fever is in the mean time abated by these Medicines, yet on account of the great Weakness brought on by its long Continuance, and which, according to Celsus, happens in all Diseases, by any slight Error in Diet, or Regimen, gentle febrile inconsiderable Paroxysms easily return, or other Diseases, such as a Cachexy, and slow Fevers, are produced, especially if the Patient eats liberally; so that, even the Enemies of the Bark, and Baglivi himself, are forced to own, that in the End, when the Fever has for a long time preyed upon the Strength, the Bark may be used to strengthen the Stomach, and the whole Body. And certainly there are many, and those considerable Disorders, especially such as arise from a Redundance and Impurity of the Juices, which might be successfully cured without Physic, by Abstinence and Hunger alone; but as many are unwilling to undergo such a Degree of Mortification, recourse must be had to Venesection, which is far less safe than Abstinence. Care, must, therefore be taken to avoid dangerous and prejudicial Measures.

Another Argument brought by many learned Physicians against the Bark is, that its astringent and corroborating Qualities suspend the febrile Commotions and Paroxysms, but do

QUI

not remove the material Cause of the Fever, which afterwards induces Relapses, or other more terrible Diseases. But we have already proved, that the *Peruvian Bark* is of such a Nature, as, when exhibited duly, in a proper Order, and in Conjunction with other suitable Remedies, to remove the Cause of the Fever, by promoting Perspiration, and restoring the due Tone of the Solids. Besides, there are Cases, where it is expedient to check and remove, for a time, morbid, and even febrile Commotions, leaving the Cause to be afterwards subdued. For sometimes the Fits are so violent, for Instance, in a continual and double Tertian, that the Strength being consumed by Watching, and long-continued excessive Heat, the Patient becomes incapable of supporting the Disease any longer. Here then it is very serviceable, and indeed necessary to suspend these dangerous Commotions for a time, that Remedies (both of the correcting and evacuating Kind) may be afterwards more efficaciously used to remove the Cause of the Fever, because the Medicines would either do no Service, or be prejudicial, during such a violent Paroxysm of the Fever, and such a Perturbation of the Economy of the natural Motions and Functions.

But there is another Argument against the Use of the Bark, which seems to carry greater Weight with it, and which is, that many Persons, as Experience evinces, who have been afflicted with Fevers, have by this Medicine been hurried into dangerous and incurable Diseases, such as slow and hectic Fevers, Cachexies, an Ascites, and Tympanites; in Men, hypochondriac, and in Women, hysterical Disorders, and in Children, Convulsions, and Epilepsies. But, though it cannot be denied, that these dangerous Disorders frequently follow Intermittents, yet the Cause of this is not evident, and therefore deserves an accurate Examination. It must be observed then, that before the Fever the Humours and Viscera are generally disposed to those Diseases, which may, also, in some measure, be produced by an improper Regimen, Diet, and manner of living, great Perturbations of Mind, and perhaps, also, by an unseasonable and imprudent Administration of the Bark, either with regard to the Quantity, or the Time of its Exhibition; so that the Person who considers this State and Condition of things, cannot assert, that a proper Use of the Bark is the sole Cause of these bad Effects, nor even suspect it, as faithless and prejudicial.

Besides, it is sufficiently evident, that the most efficacious Remedies, such as Venesection, Emetics, Purgatives, Opiates, Mercurials, Chalybeates, Preparations of Gold and Antimony, the volatile Salts of Animals, Laconic Baths, and spirituous Medicines, if used without Judgment, are equally pernicious and fatal. But surely no one can hence infer, that they are of no Use in Medicine, and ought to be entirely rejected; but he must rather argue thus: These noble Remedies are capable of producing bad as well as good Effects; and, therefore, should be properly used. But this Reasoning is still more applicable to the Use of the Bark, which is not to be classed among the above-mentioned Medicines, which are of an highly active Nature, because they contain a certain Principle, a small Quantity of which, produces sudden and great Alterations in the Body; but the Bark acts otherwise, and whoever would see the Effects of it, must take successively a large Quantity, even some Ounces of it; and we may reasonably conclude, that the Bark is not unfriendly to Nature, because it may be very successfully given in Diseases, where the Strength is decayed, and the nervous System affected; and for this Reason it is very serviceable in strengthening the Tone of the Stomach, Intestines, and nervous Parts, not only in Fevers, but, also, as Experience evinces, in Fluxes, Vomitings, Dysenteries, hypochondriac, and hysterical Disorders, and gouty Pains.

'Tis almost universally allowed, that, when the Fever is almost overcome by the Assistance of Nature, the Bark may be successfully used to suppress habitual febrile Commotions; but that it may be safely administered in the Beginning, after the first or second Fit, is principally denied by those who think Nature prudently makes use of a Fever, as a Remedy to remove the Causes, which endanger Life, being persuaded, that the wise and salutary Design of Nature is, by this means, disturbed. But Experience, the best Master in the Medicinal Art, whose Sanction is superior to all Arguments, plainly evinces, that this Fear is unnecessary. I have known several Instances of Persons, who, being seized with an epidemic Tertian, attended with dangerous Symptoms, have been happily cured by the following Method: After the third or fourth Fit, having taken an efficacious Medicine, which purged both upwards and downwards, they took the following Day, an antifebrile Electuary of the Bark, in proper Quantities, Order, and Time. By this means, after two or three Paroxysms, they were never sensible of another Attack, but perfectly restored to Health, especially when, after the Bark, they used strengthening, stomachic Medicines, and Exercise, to promote Perspiration. And I can positively affirm from frequent Observation, that a Fever is op-

QUI

posed with more Difficulty, and requires greater Caution, when it has continued for several Weeks or Months, than when the Assault is recent; because, the longer the Continuance of the Fever, the greater Quantity of Sordes arises from the Dissolution of the Blood by the hot intestine Motion; and this larger Quantity of Sordes is, therefore, corrected and evacuated, with the greater Difficulty.

Of the same Opinion are several eminent Physicians, among whom we shall only mention *Bohnius*, who in a particular Dissertation *de Fuga Februm minus suspecta*, has confirmed this Doctrine by many important Reasons; and *Bergerus*, who, in his Dissertation *de Chinchina ab iniquis Judiciis Pindicata*, very justly speaks in the following manner: "I cannot approve of *Sydenham's* mistaken Caution in ordering, that the Bark should not be too soon given, before the Fever has in some Degree wasted itself by its own Force, lest the Patient's Life should be brought into Danger, if we should suddenly check the Motion of the Blood, cleansing itself by the utmost Efforts of a Fermentation." *Padus*, *Donzellius*, *Lisler*, *Morton*, *Jones*, and principally *Bohnius*, with more Reason teach us, "That after the Use of Evacuants, if necessary, and especially of Emetics, at the Beginning, and before the Fever has taken Root, and weakened the Juices, Viscera, and Strength of the Body, its Force is successfully lessened by the Use of the Bark. Here there is no Fear either of Relapses, or of more Disorders, which *Bagliovi* ascribes to the Use of the Bark; whereas he ought rather to have ascribed these Disorders to a preposterous Cure of the Fever, and the Impurity of the Body, because both Reason convinces, and Experience demonstrates, that, by a proper Use of this salutary Medicine, both the Cause of those Disorders, and of the Fever itself, are removed; so that *Bohnius* declares, that in almost infinite Numbers, to whom he gave the Bark at the Beginning, and whom he cured, none were sensible of any ill Consequence from it.

Lastly, in order to establish and confirm the proper, secure, and efficacious Use of this Medicine in the Cure of Fevers, we shall subjoin some necessary Cautions and Admonition, the due Observation of which, will prevent any one from doing Mischief with the Bark.

The Bark, then, should not be given, till the *Primæ Viæ* are cleansed from that Collection of peccant Humours, with which they abound; and this is best performed by detergent Salts, either alone in due Quantity, or mixed with a proper Laxative, or Emetic. Nor should the Bark be prescribed, especially in a considerable Quantity, if the Viscera of the Abdomen are obstructed or insinuated with Blood and Humours, before these Obstructions are opened, and the Intarction removed; which Intention is best answered by drinking mineral Waters, by neutral and bitter Salts, obtained from hot and cold medicinal Springs, by Preparations of Rhubarb mixed with Salt of Tartar, or the *Terra foliata Tartari*, by Broths boiled with aperient Roots and Herbs, and by proper Motion and Exercise of the Body.

Nor is the Cure of an Intermittent to be undertaken by the Bark in a manifestly plethoric, cacochymic, cachectic, and hypochondriac Patient, or when the critical Evacuations of Blood are suppressed; but it is far better by seasonable Venesections, by temperate balsamic Elixirs, by the *Pilule Balsamicæ Polychrestæ*, and the Interposition of bitter neutral Salts, to remove Obstructions, and employ the febrile Commotions, which ought never to be suddenly checked, as Medicines adapted to remove these Disorders.

Greater Caution is necessary, if the Patients to whom this Febrifuge is to be given, have their Strength and Blood exhausted; if they are obnoxious to exorbitant Passions; if they are old; and if the Fevers themselves approach to a continual hectic, or a slow Fever; if there is an excessive Costiveness; if the Urine is limpid, and without any Sediment; if the Hypochondria are tumid, and an autumnal, or winter Fever, has already been long protracted; for, in such Cases, it is more expedient to moderate the febrile Commotions, if there are any, by gently evacuating and corroborating Medicines, till at last, as it frequently happens, the Fits spontaneously cease, either by a Change of Place, a more exact Regimen, and Method of Living, or a wholesome, light, serene, and warm Air.

Since it is of great Importance to the proper and salutary Use of the Bark, in what Form, Dose, Season, and under what Regimen, it is exhibited, we must observe the following Cautions: 1. As to the Form, we ought above all to choose a pure, solid, well-tasted Bark, without any musty, vapid Smell. This, being reduced to a very fine Powder, is most commodiously given in Substance, without any Addition, in any proper Vehicle. But, if any one abhors the Powder, it may be made up into an Electuary with Water and Sugar, and then swallowed. I can positively affirm, that I have found the Bark, given in this plain Method, better, and more effectual, than when mixt with many

many other Ingredients, and reduced into a Variety of Forms. When there is a manifest Weakness of the Stomach, accompanied with a Loathing of the Powder, it may be infused either in Water or Wine, edulcorated at Pleasure, prepared with a little Cinnamon to render it palatable, and which may be drank either warm or cold. Besides, if the Fever is of the bilious Kind, attended with great Heat, it is better to give the Powder mixt with a fourth Part of purified Nitre. But when, from a Suspicion of an Obstruction and Infarction of the Viscera by viscid and crude Humours, its too strong Astringency is to be dreaded, whether it is given in a solid or a liquid Form, lixivial Salts must be added, especially those of the alkaline Kind; which powerfully correct and subdue the astringent Quality of the Bark. For answering this Intention, a most secure corroborating and antifebrile Liquor may be soon prepared, by boiling an Ounce of the Bark with two Drams of Salt of Tartar, in a Pint of Water diluted with Wine. I have, also, used the following Electuary with very great Success:

Take of the Rob of Elder, one Ounce; of *Peruvian* Bark, six Drams; of the Extract of common Chamomile-flowers, of depurated Nitre, and of diaphoretic Antimony, each one Dram and an half; and of the Julap of Roses, a sufficient Quantity.

2. As to the Dose of this Specific, it is never to be given in an excessive Quantity, such as a Dram or more at a time; but it will be more advisable to give, at different times, one or two Scruples only on the intercalary Day, after the Fit, every three Hours, drinking after it a sufficient Quantity of Water, Decoction, Broth, or Beer. It may, also, be exhibited with the Aliments. But Motion and Exercise are very great Assistants to the Operation of this Medicine, as they promote Perspiration, which is very conducive to the removing a Fever, and preventing a dangerous Stricture of the Solids, or a Coagulation of the Humours.

3. As for the Time, we ought to persist in this Method of Cure, at least for a Week: Then the Fever being gone, and the Appetite returning, a Dose should be taken once every Day, and after that every other Day.

There are still further Cautions to be observed in the Use of the Bark in intermitting Fevers: For,

1. During the Use of this Medicine, if the Patient is costive, his Body must be rendered soluble, only by an emollient and gently stimulating Clyster; but not by Purgatives, for fear of a Relapse, because, by the Use of these, Perspiration is obstructed, and the Afflux of the excrementitious Humours recalled to the Intestines. But afterwards Manna with Cream of Tartar may be used, as, also, my balsamic Pills, or those of *Stahl*, or *Becher*, with some aperient Salt, given at proper Intervals, during the Intermission, and towards the End, of the Disorder, in such a manner, however, that after the Use of these Laxatives, a Dose of the Electuary may be again given.

2. When the Fever is gone, the Body should be kept in a free Perspiration; for which Reason, cold Air, North Winds, and all external Cold, together with moist and low Places, are to be avoided; and bitter stomachic and corroborating Elixirs, such as my balsamic Elixir, must be used; which being taken in the Morning, or at Noon, not only contribute greatly to strengthen the Stomach, but, also, to promote Perspiration.

I must now briefly mention the Fate this Dissertation has met with. There was published at *Frankfort* upon the *Oder*, a Dissertation, directly opposite to ours, wherein the well-known Author, out of a Spirit of Contradiction, very positively asserts, and supports the Assertion with idle trifling Arguments, that the *Peruvian* Bark, though used with the utmost Caution, is a faithless, dangerous, and noxious Medicine. I thought it not worth my while avowedly to oppose this Writer, because the Judicious and Skilful in the Healing Art will soon discover the Weakness of his Argumentation: For the sake, however, of young Physicians, who are easily confounded by a Diversity of Opinions, I have been induced to make some Remarks on that Performance.

The whole Weight of the Reasoning in this Dissertation is founded on the famous *Stahlian* Hypothesis, which is, that the rational Soul produces these febrile Commotions for a salutary End, in order to eradicate the Cause of the Fever out of the Body; and that they are, therefore, by no means to be suppressed, especially by Astringents, among which the Bark is certainly to be classed. But, as I had in this Dissertation previously overthrown this Opinion; I am the more surprised, that the Author should, upon a bare precarious Hypothesis, totally deny, and utterly reject, the Truth of Facts, vouched by the Authority of the most celebrated Physicians of all Nations in *Europe*, and which palpably evince, that the *Peruvian* Bark may be successfully and safely used in chronical Fevers,

which can be cured with no other Remedy. For it is a very unphilosophical Procedure; to judge of Experience, and measure the salutary Use of a Medicine, by imaginary Hypotheses, and the pageant Force of abstract Reasonings, since we should rather inquire first into the Truth of a Fact, and then examine the Reasons, and by these means establish the Hypothesis. Let this great Author, therefore, as it is incumbent on him, demonstrate, that the Bark, even cautiously and circumspectly given, has, without Distinction, and at all times, been detrimental in Fevers. As for my own Experience, in above fifty-five Years Practice in different Places, and particularly in *Westphalia*, where the Inhabitants are plethoric, I dare confidently affirm, that neither incurable Diseases, nor Relapses; have occurred to me, from giving the Bark prudently, and not in too great a Quantity, especially, if it was exhibited under a proper Regimen; so that I have rather observed the evident and secure Effects of it. I have myself been three times afflicted with a very obstinate intermitting Fever; and, after a fruitless Application of all other Remedies, was perfectly recovered by a proper Use of the Bark alone; whereas the Cures of intermitting Fevers, undertaken by other Physicians without the *Peruvian* Bark, or that of *Cascarilla*, have more than enough convinced me, that the Patients have not only been racked for a long time, but often hurried into violent chronical Distempers; and, what is very surprising, these very Contemners of the Bark have at last been obliged to have recourse to it, as their only remaining Refuge.

But, in order to shew from Reason, whether, as is falsely asserted, the Bark, even properly used, by its astringent Quality, depresses the febrile Commotions, without removing the Cause of the Fever, it will be necessary to examine very closely into the Manner of its operating. The Bark, then, contains fixed, terrestrial, astringent, and bitter Particles, by which it exerts its antifebrile Virtue. But who in his Senses does not perceive, that in these Principles of the Bark there is a natural Remedy, if properly used, to infringe the subtle caustic Acrimony of the Bile in the *Primæ Viæ*, from whence epidemic Tertians principally arise, before it is convey'd to the Mass of Blood, or from thence to the Nerves, and throws the whole nervous System into violent spasmodic Contractions? Further, since every one allows a strengthening Principle in the Bark, which binds up the relaxed Parts, and corroborates those that have lost their Tone, it is not to be wonder'd at, that from the Increase of Perspiration, especially on the intercalary Day, the remaining Sordes, which afford Matter for a new Paroxysm, should be entirely evacuated, and the whole Impetus of the Fever, by this means, destroy'd.

Now we readily grant, that this Medicine will prove very detrimental, and even bring on worse Diseases, if improperly administered, without any regard to an accurate History of the Distemper, the Constitution of the internal Parts, the Cause of the Fever, and other morbid Dispositions and Circumstances, as the Time, Order, and Dose, in which the Medicine is exhibited. But, since it is unreasonable to argue in the manner I have already mentioned, it necessarily follows, that the Bark, when properly applied, is beneficial, and, when improperly, pernicious; for, if the Bark, given in large and too frequently repeated Doses, finds Obstructions of the small Vessels in the Viscera, and a Redundance of viscid Humours in a Body disordered through the dull and languid State of the moving Fibres, in this Case, by its astringent and incrassating Quality, it may increase the Distemper, and excite violent chronical Distempers.

Thus much I thought proper to say at present, to convince every one, that the Bark is not so dangerous and terrible a Remedy in Fevers, and other Distempers, as some imagine, but safe, efficacious, and innocent, especially in the Hands of one, who administers it with Judgment and Reason; and that the bad Effects of it do not proceed from the Medicine itself, but should be deservedly attributed to the improper Use of it, or the Errors of the Patient, or a Neglect of removing the peccant Reliques. However, I would advise those, who are not complete Masters of the Healing Art, to refrain wholly from all heroic Medicines, and even the Bark itself, lest they should do more Injury than Good. *Hoffman*.

Mr. *Rushworth*, a Surgeon, in *Northampton*, sent a printed Letter to the Master and Governors of the Surgeons Hall in *London*, dated *October* 18. 1731. in which he gives the following Account of his using the Bark in Mortifications.

In the Year 1715. I was sent for to a Man who had a Mortification on the Foot, from an internal Cause. The Fever was very high, attended with an irregular Pulse, as is usual in that Case. I made deep Incisions in the mortified Part to the Bone, and scarified all around as far as there was any Inflammation, and used the common Applications; upon which the Fever abated, the Pulse became not only calm, but, also, regular; and in a few Days I had a Digestion at the Edges: I was obliged to leave it

Q U I

it to the Care of an Apothecary; but in a short time I was sent for again, the Fever being returned, and the Part mortified higher: I used the same Method as before, with the same Success; but all the former Symptoms returned the third time; but, upon repeating the same Method again, ceased. I thought it to no Purpose to take off the Leg, having too often found Returns after it, the Fault being in the Blood and Juices. But Providence now first directed me to order the Bark in this Case (while there was a Remission of the Fever); it answered beyond what I expected, the Fever no more returned; the Leg was taken off; and I saw the Person well and lusty many Years afterwards; and I have since several times had the Experience of the good Effects of it in the like Cases, which has been no small Satisfaction to me.

Mr. Rushworth reprinted this Letter, adding another to Serjeant Amyand, dated August 5. 1732. in which he says, I beg Leave just to mention, that leaving off the Bark too soon, a Patient of mine had a Return of the Mortification, in about five Days time; but, scarifying, and repeating it, I presently had the good Effects of it again, and she is now perfectly recovered; and though she had a very ill Habit of Body before, is now much better than she had been for several Years, and her Looks shew it to all that knew her before, though she is fifty Years of Age. In Page 35. of the same Pamphlet, he says, It is necessary, that I intimate to all Surgeons what I have mentioned to our Company, that I would not be misunderstood by my printed Letter, as if the Bark would answer in Mortifications from all internal Causes; for in some it is not proper, as Surgeons may easily suggest to themselves.

In the same Pamphlet is a Letter from Serjeant Amyand, dated July 29. 1732. giving Mr. Rushworth the following Account of his Success in exhibiting the Bark in Mortifications.

I am now to acknowledge yours of the 17th Instant, and to acquaint you, that from your Example, I have given the Bark in all Mortifications with such Success, as has encouraged the Gentlemen you mention, to administer it. I have now under my Cure a Gentleman of Seventy-eight, who owes his Life to that Medicine. His Case was at first a Gangrene after a Phlegmon; the usual Means seemed to have removed the Danger; but the Fever continuing without Remission or Intermission, a Sphacelus soon appeared, of which nothing stopped the Progress, till the Bark was used; and in twenty-four Hours, or less, the Separation began, with a laudable Pus. The same thing happened to a Jew, whose Sphacelus had got Ground for three Weeks, in spite of all Means, where several Surgeons were concerned.

I have now used it in seven Cases, the Circumstances in each being different; and yet, in all, the Bark has taken Effect; even within these few Days, to Mr. Delenor, who kept the Bagnio in St. James's-Street, in whom a Mortification happened after several Punctures in dropsical Legs. The Bark stopped the Progress in less than twenty-four Hours, and the Sloughs began to separate; but the Patient having a Jaundice, and being spent with Evacuations, it revived, and came to the other Leg; of which though he died, yet the Power of the Bark was so plain, that from this and the other Cases, I think it is evident, that we may be as sure of getting the better of, or at least of stopping a Mortification from an internal Cause by the Bark, as conquering an Ague thereby. I am, &c. Claud Amyand.

Mr. Rushworth gave the Bark in the Remission of the Fever, Mr. Amyand, in the Height of a Fever, yet it had the same Effect; which shews the Difference between these Sorts of Fevers and Agues; in which last it is known to every body, that the Bark does Harm, if given in the Fit. Mr. Rushworth says, the Bark will not answer in all internal Mortifications: Serjeant Amyand asserts from Experience, that it will answer in all internal Mortifications. Mr. Rushworth discovered this extraordinary Effect of the Bark in the Year 1715. and communicated it, as he says, to several Physicians and Surgeons; yet we never heard any thing of it, till it was lately brought into Practice by Serjeant Amyand. Neither Serjeant Amyand, nor Mr. Rushworth, have given any Account of the Dose they gave of the Bark, how often they repeated it, or how long they continued it.

Mr. John Douglas gives the following Case, by way of Instance, of the Effects of the Peruvian Bark in Mortifications.

April 22. 1732. I was sent for about fifteen Miles out of Town, to visit a Gentleman a little turn'd of Fifty, where I met Dr. Newington, of Greenwich, and Mr. Wade, Surgeon and Apothecary, of Bromley. Upon Examination, I found the Back of his Right Foot mortified near the middle Toes, about the Breadth of a Shilling, the Small of the same Leg being pretty much tumefied, and pitted a little in some Places; his Pulse quick, and his Tongue dry. Upon Inquiry, whether he had received any Bruise, Wrench, or Wound, he answered,

Q U I

Not, as he remembered; but some Persons about him talked of a strait Shoe, which he had complained of some time before, which there was no Stress to be laid on: Therefore, we were all of Opinion, that it proceeded from an internal Cause. The Dressings being prepared, I began to scarify on the mortify'd Part, and cut to the Bones without giving him any Pain. I then continued the Incisions through the Skin all over the Back of the Foot, which was a little tumefied, without his discovering the least Sense of Feeling; which did not a little surprise me, the Skin looking perfectly fair: I then went on all over the fore Part of the Small of his Leg, whence we had a considerable Discharge of a Sort of a bloody Water, but there was still no Sensation: Therefore, I proceeded as high as the Gartering below the Knee, when he began to complain a little, and pure Blood followed the Knife. His Limb was then well stuped with a strong Fomentation, and the Wounds dressed with Pledgets armed with Digestive, and dipped in hot Oil of Turpentine; over them was applied a Poultrice made of Oatmeal, stale Beer, and London Treacle.

He was then carried to Bed, and the Doctor wrote thus:

Take of Raleigh's Confection, half a Dram; compound Powder of Crabs-claws, and the Root of Virginian Snake-weed, half a Scruple; the Confection of Alkermes, a sufficient Quantity to make the Whole into a Bolus; to be taken every fourth Hour, drinking after it four Spoonfuls of the following Julap.

Take of the Waters of Milk, black Cherries, and Treacle, each three Ounces; of the Syrup of Saffron, six Drams: Make them into a Julap.

Let him drink plentifully of Whey, and alterative Treacle-water.

As soon as we withdrew into another Room, the Company asked me, What I thought of the Gentleman's Case? I told them, I thought he was in very great Danger, not only as it proceeded from an internal Cause, but because it had spread so far in so little time.

April 23. Serjeant Dickens, and Mr. Cheselden, having been sent for, came down this Morning; and, after they had seen and examined the Patient, they told him, that every thing had been done for him which was proper; that the Progress of his Disease appeared to be stopped, and that he had nothing to do but to go on in the same Method.

The 24th, his Pulse was much the same as before, and the Mortification did not seem to spread.

Dr. Newington wrote as follows:

Take of Raleigh's Confection, and Lapis Contrayervæ, each a Scruple; Syrup of Saffron, enough to make them into Bolus; to be taken every fifth Hour, drinking after it four Spoonfuls of the Julap above prescribed.

April 25. his Fever was high, his Tongue dry, and the Mortification began to spread a little. I scarified it deep, and dressed warm.

On the 26th, I could not perceive, that the Mortification had made any further Progress.

The Doctor wrote thus:

Take of the common Decoction for Clysters, eight Ounces; Oil of Chamomile, and Syrup of Violets, each two Ounces: Inject this Clyster in the Evening.

Take of the compound Powder of Crabs-claws, a Scruple; English Saffron, and Raleigh's Confection, each half a Scruple; Syrup of Cloves, enough to make them into a Bolus; to be taken every sixth Hour, drinking after it four Spoonfuls of the following Julap.

Take of alexiterial Milk-water, and Mint-water, each four Ounces; of Treacle-water, three Ounces, Syrup of Saffron, six Drams: Make them into a Julap.

The 27th, his Fever increased, and the Mortification spread cross the Toes, towards the Ball of the Foot, which I scarified deep, and dressed as before.

On the 28th. the Mortification still got Ground; therefore I had recourse to the actual Cautey, with which I burned, where-ever it was corrupted.

Next Day I found no Benefit from the actual Cautey; for the Mortification increased; so that I told those about him, I had no Hopes of his Life. They immediately replied, What! Would not taking off his Limb save him? No, I said, I did not think it would; but advised to send for the two Gentlemen they had consulted before.

On the 30th, in the Morning, Dr. *Newington*, Serjeant *Dickins*, Mr. *Chefelden*, Mr. *Wade*, and myself, met in his Chamber; and found his Fever very high, and his Tongue excessively dry, his Visage wild, a great Drought upon him, very restless, the Mortification spread as far as the *Tendo Achillis*; and he complained, also, of an Hardness and Pain in one Side of his Belly. After withdrawing, we were all of Opinion, that taking off his Limb would be of no Use; and that, in all Probability, he could not live twenty-four Hours longer.

Upon this, Serjeant *Dickins* advised the Trial of the Bark, which he said had been highly recommended to him by Serjeant *Amyand*, in such Cases. Mr. *Chefelden* was of Opinion, that it would do no Harm; but added, that he had never heard of its being serviceable in such Complaints; nor did he believe that this, or any other Medicine, would succeed, in the present Case. Since it was the extreme Remedy, I was for having it given as soon as possible. That Evening it was given, in the following manner:

Take of the finest Powder of *Peruvian Bark*, half a Dram;
Confection of *Alkermes*, enough to make them into a
Bolus: To be taken every fourth Hour.

May 1. I returned about Noon, and found a surprising Alteration to the better: His Pulse was calm, his Tongue moister, the Wildness of his Countenance gone, and he said he had rested much better than any other Night, from the Beginning of his Disorder. When I opened his Leg, I found the Mortification had made no further Progress; he had then taken but four or five Doses of the Bark.

Next Day he was still better, and we had a small Discharge from the Sore: He had five or six small Stools, but we stopped the Purging, by adding three Drops of liquid Laudanum to each Bolus of the Bark.

On the 3d I found two large Abscesses formed, one on each Ankle: The innermost being biggest, I opened it first, and had about four or five Ounces of good Pus; then I opened the other, and found near the same Quantity of Matter: I could now thrust my fore Finger, with Ease, through, from the internal to the external Wound, between the *Tendo Achillis*, and the Bones of the Tarsus, notwithstanding the outermost Tumor subsided but very little after opening the innermost.

Thus the Violence of the Fever being taken off by the Bark, Nature was enabled to form these Abscesses, which was an infallible Sign that the Progress of the Mortification was stopp'd. We then order'd the Bark should be given only every six Hours.

Next Day I found his Pulse higher, his Tongue a little dry, and the Discharge rather less than the Day before; therefore we ordered the Bark to be given every four Hours, and a Glas of Madera Wine after it.

On the 5th I found his Pulse regular, the Digestion plentiful and laudable, his Countenance serene, with other favourable Symptoms; but the next Day I found him very uneasy, and his Pulse quicker; and, upon Inquiry, I found this Alteration proceeded from his Mind being ruffled by his Lawyer, about his Will.

On the 7th I found the Symptoms favourable; on the 8th his four little Toes being entirely mortified, I cut them off; and, next Day, I cut off his great Toe, and desired him to eat and drink more freely.

On the 14th every Symptom continued favourable, the Discharge from the Wounds was plentiful and laudable, a total Separation was now made between the living and the dead Parts, and the Sloughs were hanging, like Tatters.

On the 18th he had two large Stools in the Morning, and a great Discharge from his Wounds, which I thought weakened him; therefore we ordered a Mixture, with *Confectio Fracastorii*, to be taken, in case he had any more Stools; and, also, to add liquid Laudanum to his Boluses of the Bark.

On the 20th I laid open a large Sinus above the inner Ankle. On the 24th Mr. *Wade* and I agreed to give him the Bark every six Hours only.

On the 28th they shewed me an œdematous Tumor on the Back of his other Foot, upon which, we ordered him to take no more Bark, and drink a little more freely of Wine. He had now taken the Bark every four Hours for twenty-three Days, and every six Hours for five Days, in all, about ten Ounces.

Next Day I ordered his Left Foot to be washed well with hot Water, Bran, and Soap, every Morning, to get off the Dirt, and scaly Foulness, which obstructed Perspiration: We, also, ordered him some bitter Draughts, to be taken three times a Day.

On the 30th I found the œdematous Swelling of the Left Foot lessened; and I designed to have purged him, but that he had two or three natural Stools: Next Day I found him hearty, and the Wound in good Order; therefore I took off the Bone of the *Metatarsus*.

June 2. an old Gentleman, who came to visit him, took a great deal of Pains to prejudice him against our Proceedings. On the 3d I found an Impostumation about the fore and middle Part of his Leg; but I was obliged to bring Serjeant *Dickens*, next Day, to persuade him to suffer it to be opened; with which he did not comply without Reluctancy. I made an Incision about two Inches long, and had a Discharge of three or four Ounces of Matter: On the 5th I carried him some Spaw-water, to drink with his Wine.

On the 7th I cut off another of the metatarsal Bones; and, on the 9th, I cut into the Joint of one of the metatarsal Bones; to hasten its Separation. On the 15th I cut into the Sloughs in the Foot, and let out a great deal of viscid Matter; and then snipp'd off all the loose Rags of Sloughs; upon which, I discovered a large Fungus, which had thrust forth under the Sloughs, from the tarsal Bones.

On the 16th I cut off the Remainder of the metatarsal Bones, and sprinkled the Fungus with red Precipitate. On the 19th I perceived the Tibia bare about the middle; a large Sinus, and a considerable Discharge: The Sinus I laid open on the 21st; and on the 22d I laid open a small Sinus on the Back of his Foot. There was a large Discharge from his Wounds, which weakened him, and lessened his Appetite. The next Day the Discharge was very fetid, and in too large a Quantity; and, on the 24th, it seemed rather to increase, and his Strength to decrease: Nevertheless, I laid open two more Sinuses. On the 25th the Discharge still increased; however, I laid open one more Sinus.

The Ulcer now reach'd from the Origin of the Soleus, just below the Knee, all along the Inside of the Tibia, as far as the Heel, being in some Places very broad, and in others very deep; all the Bones of the Toes and Metatarsus were gone, and all those of the Tarsus carious. I now suspected that the Tibia was carious further than we perceived it, which might be the Cause of that great and constant Discharge; and I thought that he could not bear so large a Drain long, and that it was better to have his Limb off, before it was too late: But, on the 27th, I was much pleased, to find the Discharge considerably lessened, and could discover no more Sinuses: We, therefore, agreed to proceed as before, only to dress twice a Day, for some time.

On the 28th I found the Ulcer in good Order, and the Discharge lessened.

July 1. we ordered an Infusion of the Bark to be taken twice or thrice a Day. On the 8th he was carried out into his Garden, for the first time, in his three-wheel'd Coach, for the Benefit of the Air. On the 12th I took off the *Os Cuboides*, and the three small Bones of the Tarsus. On the 16th I separated the *Os Naviculare*, and left only the *Astragalus* and *Os Calcis*.

August 5. I cut off, with a Knife, that large Fungus which sprung from the *Os Calcis*, and had plagued him so long, and then applied the Actual Cautery to stop the Blood, and consume the Roots of the Fungus. Before this, I had tried red Precipitate, Roman Vitriol, Butter of Antimony, and even the Potential Cautery, several times, one after another, but could not destroy it.

On the 29th, Part of the *Os Calcis* came away.

Sept. 4. I took away the *Astragalus* whole, and the Remainder of the *Os Calcis*, as I thought: When these two Bones came out, they left a Hollow big enough to receive a Duck's Egg; the back Part was form'd by a horny sort of Excrecence, which seemed to spring from the *Tendo Achillis*, the fore Part of it, by the Remainder of the Flesh which made the Back of the Foot, and the upper Part by the hollow End of the Tibia: A good deal of Blood follow'd these Bones; therefore I cramm'd this Hollow full of Lint, and roll'd it up tight.

On the 6th, I cut off this large horny Excrecence (which made a Half-Moon round the End of the Tibia) with a Knife; there was no Appearance of any Bone in it, yet my Knife stopp'd, when about half way through, which surprised me a little, because I concluded the *Os Calcis* was entirely gone, yet there was a pretty large Piece of it in the middle of the Fungus. I, therefore, cut a little higher towards the *Tendo Achillis*, and it separated, with Ease, all round. It bled very freely, so I ty'd one Vessel, which spurted out, and stopp'd the rest with the Actual Cautery, which, at the same time, consumed the Roots of the Excrecence. It was very remarkable; that the End of the Tibia was not carious, notwithstanding these foul Bones had remained there so long.

On the 13th I found all the Sloughs separated; the End of the Tibia covered with a fine grainy Flesh; the Lips thin, and the Discharge moderate and laudable.

By Nov. 8. the long Ulcer, which reached from his Knee to his Heel, was perfectly cicatrized; and though all the Bones of his Foot were taken, yet the Ulcer, on the End of the Tibia, was not above the Breadth of a Shilling, and, otherwise, very favourable.

Q U I

favourable. I then ordered a wooden Leg to be made for him, to clap his Knee on, and walk about for Exercise, until this little Ulcer should be cicatrized.

Mr. Samuel Lewis, aged Seventy-six Years, of a pale Complexion, and choleric Constitution, a lusty, and, seemingly, a very healthy Man, having but little Sickneſs from his Youth, shewed me an Inflammation of his Left Leg, extending from an Issue he had below his Knee, down to his Ankle, and all round his Leg, partaking of an Erysipelas and Oedema. I threw out the Pea from his Issue, and endeavoured, by discutient Fomentations, Embrocations, and Cataplasms, with Bleeding, and lenient Purges, to mitigate the Inflammation, but to no Purpose; for I found it tending, very fast, to a Gangrene: His Leg, from an intense red, turned livid black; Blisters arose, &c. I would have scarified it, but was not permitted.

On the thirteenth Day the Tumor was sunk, his Leg black and dry, his Pulse quick, with frequent Intermiſſions; his Countenance wild, his Tongue hard, parched, and dry: He would not permit the necessary Incisions to be made. With the Consent of Dr. Anthony Weaver, a Gentleman of great Charity, Humanity, and Learning, I prepared eight of the following Draughts:

Take of the Powder of the best *Peruvian Bark*, half a Dram; of the Water of Black Cherries, one Ounce and a half; and of the Syrup of Saffron, half an Ounce: Mix, for a Draught.

One of these Draughts I gave him about Noon, and order'd, that he should continue to take one every four Hours.

On the fourteenth Day, about Ten in the Morning, by which time he had taken three Drams of the Bark, I found his Tongue moist, his Countenance not so wild; and, examining his Leg, found it inopistumated, from a little below the superior Tubercle of the Tibia, down to the Small of his Leg; a little above which I saw a small Aperture, with a little Matter ousing from it. I told him, he stood a very fair Chance for his Life, if he would submit to the suitable Means. With his Allowance, I immediately entered the Probe-point of my Scissars at the Aperture, and cut upwards, as far as it was hollow; then turned them, and cut downwards, as far as the Cavity ran, and discharged between three and four Ounces of a well-digested Pus; and, after fomenting very well with a Decoction of the warm Plants in a strong Lixivium of Wood-ashes, Sal Ammoniac, and camphorated Spirits of Wine (which I had used from the Time I suspected it would mortify), I dressed the Incision with equal Parts of Basilicon and *Linimentum Arcaei*, spread upon a Dossil dipped in hot Oil of Turpentine, with a Cataplasin of Oatmeal, Flowers of Centaury, and Chamomile, of each equal Parts, with the Fomentation and Oil of Chamomile over all. He found an agreeable Warmth about his Leg, after the Dressings were applied.

On the fifteenth, I found him very chearful, and discovered a large Sinus betwixt the Soleus and *Gastrocnemius internus*; I laid it open, and discharged about the same Quantity of well-digested Matter as Yesterday: There was a very large Slough in the former Incision, which I cut off, and dressed as before.

The sixteenth he had been very restless all Night, his Pulse irregular, his Tongue rough and dry, with Flushings in his Cheeks. Inquiring if he had taken his Draughts regularly, I was told he had not, through the Attendant's Drowsiness: After reprimanding them for that Neglect, and cautioning him about it for the future, I opened his Leg, and found the Discharge large, a fungous Flesh rising in the first Incision, which I sprinkled with red-Precipitate, and dressed as before; and, by reason he had not a Stool since the fourteenth, I ordered him a common Clyster, which brought away some harden'd Excrements: At Night, his Heat and Flushings were not so great, and his Tongue was moister.

The eighteenth, being wearied of his Draughts, I ordered thus:

Take of the Powder of the best *Peruvian Bark*, half an Ounce; and of the Confection of Alkermes, one Ounce: Mix together, and divide into eight Boluses; one of which is to be taken every fourth Hour, drinking after it three Spoonfuls of the following Julap:

Take of Milk-water, and Black Cherry-water, each four Ounces; of Rue-water, half an Ounce; of the epidemical Water, two Ounces; of the Tincture of Saffron, prepared with the Aqua Theriacalis, one Ounce; of the Confection of Alkermes, two Ounces; and of the Syrup of Cloves, two Ounces: Mix all together.

I observed Matter lodged in the *Gastrocnemius internus*, almost to the Back of the Leg; I opened it in the most depending Part, but had not the Discharge I expected.

Q U I

On the twenty-first Day, Compresses and Bandages were applied, to unite that Cavity, and prevent the Matter from lodging in it.

On the twenty-second, a Sinus, running towards the Small of his Leg, opened.

On the twenty-third, he complained of a Pain in his Side, and had a restless Night: I dressed the Ulcers only with dry Lint; the Cavity above-mentioned inclined to unite.

On the twenty-fourth he was very much dejected, but I could not apprehend the Reason of it; every thing appeared in good Order.

On the twenty-fifth he shew'd me a Swelling in his Groin, with great Hardness and Inflammation reaching down the Inside of his Left Thigh, extending to a pretty large and insensible Tumor a little above his Knee, which he found gradually to increase since the fifteenth Instant, but did not speak of it before, lest he should (as he expressed it) be cut there. I applied an emollient Plaster over it, and was apprehensive he would have a very large Abscess, which would exhaust him: There was very little Discharge from his Leg.

Till the thirtieth Day his Fever increased, with an irregular Pulse, great Drought, and a Dryness of the Tongue, notwithstanding he continued the Use of the Draught or Bolus, as before; very little Discharge from his Leg, the Ulcer appearing livid. I fomented well, and applied the warm Digestive, as above. The Swelling in his Groin very much increased; the Inflammation decreasing, I felt Matter to fluctuate, but deep; the Tumor not very painful. Not having a Stool for several Days past, I gave him a lenient Purge, by which he had a very large Stool of black and very fetid Excrements.

On the thirty-first, the hard insensible Tumor above his Knee was of a livid Colour, and that in his Groin rising towards a Point near the Inguen, inclining to the Inside.

On the first and second of February, instead of Matter, there was a Discharge of clotted Blood from his Leg: I dressed with the warm Digestive.

On the third, the Pus was laudable, the Tumor in his Groin considerably raised; he took a lenient Purge, which gave him one Stool, not having had one since the thirtieth of last Month.

The eleventh; to this Day his Fever continued, but not in any Degree, and his Pulse was irregular; a white Pustule appeared on the most prominent Part of the large Tumor in the Inguen, which I cut, and then entering the Point of my Probe-scissars, cut about an Inch in Length near his Groin: Well-digested Matter gushed out, as from a Cock, and in as full a Stream, sometimes streak'd with Blood: I took from thence, at least, three Pounds. His Leg begins to cicatrize.

On the twelfth, a large Discharge about the Bed, from the last Incision, and a large Quantity of Matter that fell below the Orifice, yet in the Cavity on the Inside of the Thigh. I applied a Caustic on the lowest Part, and discharged from thence about half a Pound; I, also, open'd that Tumor near his Knee, and discharged an Ounce of well-digested Pus.

On the nineteenth I opened another Sinus on the Inside of his Leg, and discharged thence only several Clots of Blood. From this time the Discharge from his Thigh gradually lessen'd; that very large Sinus united, by means of Compress and Bandage; his Fever left him; and he did not use his Medicine since the fourteenth Instant; in which Time, in Draughts and Boluses, he had taken between ten and twelve Ounces of the Bark, which, being continued so long, and regularly, I believe assisted Nature to expel her Enemy in that very large Abscess in his Thigh, which, otherwise, might, notwithstanding the Mortification was stopp'd in his Leg, have seiz'd it again, or have fallen upon some more noble Part, and occasioned his Death; after which, I made him a Decoction of the most agreeable Bitters, by which means, he recover'd a good Appetite, and, in a short time, was able, with a little Assistance, to walk down Stairs, and any-where else in the House, with a Staff only; and, on the twenty-fifth of March, he walked to my House to be dressed, which is near a Quarter of a Mile; and, about a Week afterwards, went to his Work as usual, (which is mending Shoes) his Leg giving him very little Disturbance. In the Day it swells considerably; but, when he rises, in the Morning, is of its natural Size; for which I order'd a laced Stocking. His Thigh is strong, and firmly cicatrized; as, also, is his Leg; and the Man enjoys good Health, and is every Way as fit for his Work as he was before his Illness.

A Surgeon of Glasgow, of a very bad scorbutic Habit of Body, about forty Years of Age, had a little Pimple on the middle of the Under-lip, which his Barber cut the Top from, in shaving him, on Saturday the ninth of February; the following Evening, upon going out to the cold Air, the Pimple swelled, and turned hard, with an Inflammation all round it, which increased the Monday following: He applied an antiphlogistic Fomentation, with Spirit of White camphorated. Notwithstanding the frequent Use of these for four or five Days following,

following, and his being twice blooded, the Inflammation, Hardness, and Swelling, increased considerably, extending itself to the Angles of his Mouth, and some way along the Cheeks, and all round the Chin, with great Pain, and with vast Disorder through his whole Body.

On Friday the fifteenth, at Eleven at Night, a small black Spot, about the Bigness of a Herring-scale, appeared (not where the Wound was, but) on the middle of the red Part of the Lip, which spread so fast, that, by Eleven next Forenoon, it cover'd near one half of his Lip, that then began to stand out much; when a Consultation, of almost all the Physicians and Surgeons in Town, was called, who advised the Continuation of the Fomentation and Spirits, as before, and a Decoction of the Woods. For two or three Hours the Mortification continued to spread, till it had covered almost his whole Lip, reaching inwards, and downwards, to the Gums, the Hardness and Swelling of the neighbouring Parts increasing. Upon this, he was advised to try the Powder of the *Cortex Peruvianus*, half a Dram for a Dose. He took the first Dose betwixt Three and Four o'Clock Afternoon, and his Lip was dressed at Ten at Night, when the Mortification did not appear to be increasing, at least the Increase was very inconsiderable: He then took another Dose of the Bark. Towards the Morning of the seventeenth his Lip was again fomented, and he took a third Dose of the Bark: At Ten of the Forenoon I dressed it, and found the Mortification had made no further Progress since last Night: At Night I dressed it again; and then, for the first time, observed something like an Appearance of Suppuration at the Place where the Wound, or, rather, Pimple, was; but none at all on the mortified Part. That Night he took another Dose of the Bark, and continued to take two Doses, one in the Morning, and another in the Evening, for two Weeks.

The Fomentation and Spirits being applied twice a Day, and a little Emulsion given him for Drink, without any other Medicine than the Bark, the Suppuration succeeded well in the mortified Parts on the third Day after he began to take that Medicine; upon which, proper Digestives, and other Dressings, were applied. The Sloughs cast off very well; the Hardness and Swelling went off; and, in twelve or fifteen Days, the Lip healed up, though with a considerable Contraction, by the great Loss of Substance.

In very cold Air he still feels a Pain in his Lip. This, I am apt to believe, does not so much proceed from the Callus, as from his Lip pressing upon the fore Teeth, which are very rough and loose; and which it does, more especially, when he attempts to speak, by the Lip being so much contracted.

I have read this Account to the Patient, and had his Approbation of my Relation of the Facts, which my Attendance on him all the Time of this Disorder gave me sufficient Opportunity to observe.

Mr. Monro, Professor of Anatomy in the University of Edinburgh, gives the following Remarks upon the *Peruvian Bark*.

After the good Effects of the Bark, in Gangrenes, were known, I had Occasion to use it several Times, in that Disease, with Success; and sometimes, by Necessity or Choice, gave it in an Injection by the Anus, rather than by the Mouth, as I had, also, formerly done in Agues: The Quantities given in Clysters were larger, but the Effects were the same. One Cure of a Gangrene, made, I think, by the Bark in Clysters, seems to me so remarkable, that I must tell the History of it.

A young Gentleman, very healthy, in Appearance, had strained his Left Hand, but had no Uneasiness in it for ten or twelve Days; at the End of which, he was suddenly seized with a very sharp Pain near the *Os Pisiforme* of the Wrist; and, soon after, the Teguments on the anterior Part of the metacarpal Bone of the little Finger swell'd: He neglected to ask Advice for two Days; then some Student, who saw it, observing a Mortification begun, scarified the Skin, fomented the Part, and applied some digesting Ointment with Oil of Turpentine; which Dressings were continued, also, the third Day.

On the fourth Day, when I saw him first, the Teguments covering the short Muscles of the little Finger were all mortified, his Pulse was so low, that, with Difficulty, I could feel it, and it was so quick, that I could not number the Beats of it. He had a general Tremor over all his Body; the *Subsultus Tendonum* was very frequent; he had a constant Anxiety, Restlessness, and Delirium; his Tongue was parched and dry; and whatever Food or Drink he swallowed, was vomited before it almost got down to his Stomach. The gangrened Parts were again scarified and fomented, their Edges were dressed with warm Basilicon, to which a small Proportion of Oil of Turpentine was added, and a Poultice of *Venice Treacle* was put over all. Soon after, his great Guts were emptied by a laxative Clyster, and, as soon as the Operation of this was done, five Ounces of warm Milk, and a Dram of the Powder of the *Peruvian Bark*, were injected, which he retained: Four Hours

after, the Milk and Bark were repeated; and two more such Injections were given, in the Night-time.

Next Morning he had no Raving, Tremor, Subsultus, or Vomiting; and his Pulse was stronger and slower: The Hand was dressed, as the preceding Day, and the Injection with the Bark was repeated; in the Afternoon it was changed, at the Patient's Desire, for a Bolus of half a Dram of the Bark, which was repeated every four or five Hours. The Fever ceased, the gangrened Parts began to separate next Day, and, the Bark being continued several Days, the Cure went on without any further Accident, except that he was put to a good deal of Pain, one Day, by an Application of ill-prepared *Aqua Phagedanica*. This I mention, to have an Opportunity of warning the younger Surgeons not to make Use of that Medicine, unless when the Lime-water is strong enough to make the Solution of the corrosive Sublimate Mercury to turn turbid, and to precipitate in Form of a very fine red Powder: For if the Lime-water is effete, and remains clear after the Sublimate is mixed with it, instead of a very mild Medicine, they are to expect all the Effects of unaltered corrosive Mercury.

In all the Gangrenes where the Bark was given with Success, I observed, that it brought on a mild Suppuration, which I saw became worse when the Use of the Bark was interrupted, and then turned of a good Kind, when the Bark was again given: This made me join in Opinion with others, that it would, also, be of good Service in several Sores where the Suppuration was faulty: Experience proved we judged right; so that the Bark became a common, and a beneficial Medicine, in this Town, for such Sores.

This Effect of the Bark, in procuring a kindly mild Suppuration, led me to imagine, it might be serviceable in the Small-Pox of a bad Kind, where either a right Suppuration did not come into the Pustules, or the Petechiæ shewed a Disposition to a Gangrene; and I had the Pleasure to see the Effects I expected from it in several variolous Patients, to whom I gave the Bark: The empty Vesicles filled with Matter, watery Sanies changed into thick white Pus; Petechiæ became gradually more pale-coloured, and, at last, disappeared; the blackening of the Pox began sooner than was expected. I no sooner had the good Effects of the Bark in the Small Pox ascertained by Trials, than I spoke of it to other Gentlemen in Practice here, some of whom had reasoned in the same way I had done, and had been giving it to their Patients with Success; since which, I have had Thanks from some of my Friends in the Country, to whom I recommended this Practice.

I gave, at first, the Decoction, and then the Extract of the Bark; afterwards, I forsook those weaker Preparations for the fine Powder, which was mixed with some mild rich Syrup, and an aromatic distill'd Water, both which may be varied, as the Patient prefers one sort of Taste to another. In this Form, from ten to forty Grains were ordered to be swallowed every four or five Hours.

But as several Children could not be prevailed on to take it by the Mouth, in any Form I could contrive, and, through fear of having this Medicine given, would taste neither Food nor Drink, there was a Necessity of using the other Form of Clysters: Previous to giving the Bark this way, the great Guts were unloaded by a laxative Injection; and then from half a Dram to two Drams of the Jesuit's Powder was injected, with a small Quantity of warm Milk, to which some Diacordium, or Syrup of Poppies, was added, if the Clysters were retained too short a time: These Injections were repeated Morning and Evening, or oftener.

I have hitherto only given the Bark in the Small Pox, after the Eruption, and continued it till the Blackening was completed; but am persuaded, from the Effects I saw of it, in mitigating the Secondary Fever, that if it is given during the eruptive Fever, it might be of Use in determining the Small Pox to be of a favourable Kind.

I hope what I have said will not be understood as if I recommended the Bark as an infallible universal Remedy in those Diseases, and the only one that needs to be employed in them: So far from meaning any such thing, I assure you, I have seen it fail, more than once, in both Gangrenes and Small Pox; and, in general, I know no Medicine which is not capable of doing Hurt to Patients, under some particular Circumstances of the very Disease for which it is given with the most Success. Thus, in the Small Pox, when the Lungs are violently infarcted, I would not consent to give the Bark: I have seen Patients, in this Condition, almost suffocated, after a small Dose of it: They would, also, in my Opinion, do very ill, who would trust entirely to the Bark, neglecting the other Medicines which have been used, to Advantage, in the different Circumstances of this Disease. The Bark would not, surely, moderate a very high, full, hard Pulse, with high Breathing, and inflamed Brain, in either eruptive or secondary Fever of the Small Pox, as Blood-letting would do. The Bark could not

clear the Stomach and Bronchia of viscid Phlegm, as an Emetic would; it would not, singly, calm the general Spasm, or relax the Skin, to make way for the Eruption, as when assisted by a tepid Bath: Nor would it raise a sinking Pulse, or discharge a Load of viscid Humours, as the Stimulus of a Blister, and the Suppuration after it, will frequently do. In short, I pretend to recommend it no further than as an excellent Assistant to Nature in what the Antients called the Concoction and Maturation of the morbid Matter, the Effects of which appear in moderating the Fever, and bringing a kindly mild Suppuration; which are, indeed, grand Articles, in the Cure of Gangrenes, Ulcers, and Small Pox. *Medical Essays.*

Mr. Ranby, in a late Treatise, recommends the *Peruvian Bark*, in some Cases where its Use is not, I believe, commonly known, as follows:

The Method I have prescribed to myself, in penning this small Treatise, leads me in this Place to speak of the Bark; a Medicine which no human Eloquence can deck with Panegyric proportionable to its Virtues; of such incomparable Benefit it is to Mankind!

I have for a long time indulged myself in the frequent Use of this noble Drug, in respect of large Sores of every Kind; and have often experienced, that, in those painful Circumstances, it would procure Rest, if given in large Doses, when even Opium had been taken, without any manner of Effect.

Though I am aware, that a very ingenious Surgeon recommends the Bark (see *Philos. Transf.* N^o 426.) against Hæmorrhages, in external Wounds in general; yet the prescribing it in gun-shot Wounds, in the manner I introduced it last Campaign, is a Practice, as I conceive, no-where left us on Record; and this I did with extraordinary Success, of which I shall give some few of the many Examples that have occurred to me in Practice.

In all large Wounds, especially those made by a Cannon-ball, there is constantly a great Laceration of the Membranes, and Parts endued with an exquisite Sensation; and these are ever attended with an excruciating Pain, and a Discharge of a gleety Matter, which, if not restrain'd, proves often of the last Consequence. In this unhappy State, the Bark (given in Doses of a Drachm each, and repeated every three Hours, or oftener, if the Stomach will bear it) with surprising Efficacy repairs the Breach made in the Constitution by this terrible Havock. Elixir of Vitriol, taken three times a Day, in a Glass of Water, I find to be of singular Benefit, and to prove a very good Assistant to the Virtues of the Bark; and, if the Body be costive, to each Dose of the Bark I add four or five Grains of Rhubarb, till that Inconveniency is remedied. Should the Bark run off by more than four or five successive Stools, I take care to check this Effect of it, by ordering two or three Drops of Laudanum, or two Spoonfuls of a Diacordium Mixture, along with it, every time it is given.

Where the Sore discharges a considerable Quantity of gleety Matter, is flabby, looks pale, and glossy, (which Appearances are ever consequent to a Loss of Substance) the Bark continually relieves the Pain, that is predominant in this Case, thickens the Matter, lessens its Quantity, and quite changes the Complexion of the Wound. And though the Patient has a dry Tongue, great Heat, a quick, low Pulse, and a Head hardly clear; yet, even in this Situation, I have known it to do Miracles. Nor (I freely own, when the Necessity for it is evident from Symptoms) have I, in administering it, the least Attention to the Quickness of the Pulse; and in Wounds where, upon every Dressing, the Arteries have started, and, of course, subjected the Patient to no little Hazard, I have frequently remark'd the Bark to procure the most unaccountably good Effects.

However, I would not be understood to insinuate, that the Bark will stop the Bleeding of any considerable Artery; nevertheless, though this efficacious Property is not to be expected from it, the vitiated Texture and State of the Blood (which, from too great a Degree of Fluidity, forces thus its Way thro' the arterial Passages) will be alter'd more effectually from the Exhibition of it, than from any thing I know in the whole *Materia Medica*: From whence, I think, is plainly pointed out to us, the Basis we are to erect our future Superstructure upon. The Bark, on these Occasions, I constantly advise, together with Opium, more or less, in proportion to the Urgency of the supervening Symptoms.

As to the Efficacy of the Bark in amputated Limbs, Mr. Ranby gives the following Case: It is very common, in scorbutic Constitutions, for a Sore, the first eight or ten Days after taking off the Limb, to promise all imaginable Success; from which time it frequently begins to gleet prodigiously, looks pale, glossy, and flabby; and this Gleet, if not check'd, in a little while runs the Patient out of the World. In Exigencies of this Kind, the Bark hardly ever fails to procure Relief,

and works an apparent Change in a very short Space of Time, sometimes in twelve Hours. This I can attest for absolute Truth, in regard of a very worthy Gentleman, about fifty Miles from London, who broke his Leg by a Fall from his Horse. I took it off the second Day from the Accident, and, after the first Dressing, resigned him to the Care of his neighbouring Surgeons, not, in the least, afterwards suspecting but that every thing was succeeding agreeably to our Wishes: But the Scene was soon reversed; for, about sixteen Days after, I receiv'd a Letter from the Gentleman who had the Management of him, intimating, that a small Artery, near the Skin, bled very freely, on their removing the Dressings. In Answer, I advis'd a Vein to be open'd in the Arm, and the Bark to be taken instantly. But, as the Symptom of the arterial Opening ceas'd, and the Patient was without any Sign of a Fever, the Advice of seeking Resource from the Bark was postpon'd. The Seven-and-twentieth Day, another Surgeon, eminent in the Profession, and myself, were hurried out of Town to his Assistance: On our Arrival, we found him very much emaciated, a great Gleet incessantly ousing from the Stump, which, on the Removal of the Dressings, bled, from every Pore, like Water press'd from a Sponge. We immediately gave him the Bark, and repeated it every two Hours. The next Morning, the Discharge was considerably lessen'd, nor did there appear the least Footsteps of Bleeding. If he accidentally, at any time, neglected taking it only for a Day, or even lessen'd the Doses, the Wound inevitably pointed out the Omission, by the Alteration of its Complexion. He persisted in the Method of taking the Bark every two or three Hours, till he came to Town, when it was thought proper to give him a larger Respite. He now enjoys a perfect State of Health, and has done so ever since the Stump was heal'd; but, ere this was accomplish'd, he took near nine Pounds of the Bark. *Ranby.*

This Bark is brought from *Peru*, and there are three Kinds of it. The first is of a bitter, resinous Taste, and not so red as the common sort; the second, less than the first, is cover'd with a Moss; the third is the finest, and imported in small Pieces.

The *Peruvian Bark* is uneven, and thick, its Colour resembling that of Cinnamon, Coffee, or Rust of Iron. It is of a bitter Taste, and has no Smell but what comes from the Wood. The Name *Kina* is taken from the Count of *Cinchon*, who was Viceroy of *Peru* when the Medicine was discover'd. The Tree, to which it belongs, is not, as yet, sufficiently known: It is said to have Leaves like the Plum-tree, and flowers like the Orange-tree. *Herman* says, it is a high large Tree, like the Lime-tree; and that it bears Berries. It grows in the inland Part of *Peru*, on the Mountains near *Loxa*, or *Loja*, in the Province of *Quito*. The *Spaniards* say, that the Use of its Bark was discover'd in the following Manner:

Near the Town of *Loxa* was a Lake surrounded by *Quinquina* Trees, before the *Spaniards* settled in that Country: These Trees being, by an Earthquake, or some other Accident, thrown into the Lake, communicated a bitter Taste to the Water; so that the Inhabitants, who used to drink it, were obliged to leave it off: However, an *Indian*, who had a violent Fever upon him, and, consequently, a great Drought, finding no other Water, was forced to drink of this, by which he was perfectly cur'd of his Fever. He related this Adventure to some of his Friends, who, having made the same Experiment, were likewise cur'd: Upon this, they set themselves to discover what had given this febrifugous Quality to the Water of the Lake, and found, in the first Place, that a great Number of Trees had fallen into it; and, Secondly, that, after a certain time, these Trees, being rotted in the Water, it lost its bitter Taste, and, at the same time, its Virtue: Whence they concluded, that this Virtue was owing to the Trees. Afterwards, they tried all the Parts of them insus'd in Water; and thus discover'd, that their whole Virtue resided in the Bark. The *Spaniards* having conquer'd their Country, this invaluable Medicine was kept a great Secret; and they oblig'd themselves, by Oath, never to discover it to their Conquerors; hoping, thereby, to see them all perish by the epidemical Fevers that then reign'd in the Country. The Secret was inviolably kept, till the Year 1640, when a *Spanish* Soldier, quarter'd in an *Indian's* House, who had got into the good Graces of his Landlord, was seiz'd with a severe Ague. The *Indian*, touch'd with Compassion, and fearing, perhaps, that he should have a worse Guest, if this Soldier happen'd to die, brought him the Bark, which having taken, he was soon perfectly cur'd. The Soldier, surpris'd at such an unexpected good Effect of an unknown Remedy, made use of all his Address to discover the Tree to which this Bark belong'd, and, at length, succeeded. For some time he contented himself with curing his Fellow-soldiers, but never told them by what means; but the Vicequeen, Wife of the Count *de Cinchon*, then Viceroy of *Peru*, being

being seiz'd with an intermitting Fever, which had so far baffled the Skill of her Physicians, that her Life was despair'd of, and this Report having reach'd as far as *Luxa*; the Soldier, who was Master of the Secret, told his commanding Officer, that if he would allow him to go to *Lima*, he would cure the Vice-queen. The Officer, having inform'd himself of the Cures he had perform'd in that Country, readily gave him not only Leave to go, but, also, Letters of Recommendation, and proper Certificates. Being arriv'd at *Lima*, he was admitted to make Trial of his Medicine, on this Condition, that he was to take as much himself as he gave to his Patient. This he easily agreed to; and, having succeeded, in a very little time he was amply rewarded, and then prevail'd on to discover the Secret, which the *Spaniards* made use of from that time forward, with so great Success, that the Physicians were astonish'd, and half-starv'd. In 1649. Father *de Lugo*, a Jesuit, then Procurator General of his Order, and afterwards a Cardinal, brought some of this Bark to *Rome*, and the Society began to bring it into Reputation in *Europe*, by which they got a great deal of Money, in a short time. They sold it for more than the Weight in Gold, and, to disguise it the better, never parted with it but in Powder. From that time it was call'd the *Jesuits Powder*, because these Fathers were the sole Masters of it, and had brought it into Use. Two Drams were at that time thought sufficient for the Cure of any intermitting Fever, because they never gave it till after many other Medicines had been made Trial of. The Physicians were divided in their Opinions about it, some looking on it as a divine Medicine, whilst others believ'd it dangerous, and even fatal, in many Cases. Many Treatises were written, some for it, others against it; but the *English* Physicians, having, at length, made several Experiments with it, that might be depended on, it came to be greatly in Vogue in *England*; and the famous *Morton* wrote his *Pyretologia* in its Defence. In 1679. a Person, nam'd *Tabor*, who, to make himself more considerable, changed his Name to *Talbot*, came into *France*; where, having cur'd the Dauphin of a stubborn quartan Ague, by this Medicine, it gain'd a great Reputation, and the King purchas'd his Secret, and made it public. It was then term'd the *English Remedy*, and consisted of an Infusion of the Bark in Wine. There was a little Treatise publish'd at that time, with this Title, *The English Remedy for Fevers*.

The Bark is an infallible Remedy for all intermitting Fevers, if the following Circumstances be observ'd:

1. The Patient ought to lose some Blood; and to be purg'd before he takes the Bark; and, if he is of a dry Habit of Body, he ought to be kept, for some time, to a liquid Diet; because, before the depuratory Fermentation is begun, the Fluids ought to be well diluted.

2. The Bark made use of ought to be compact, or solid, of a redish Colour, like Cinnamon, of a faint Smell, a little musty, bitter and astringent to the Taste, and not kept too long.

3. It ought to be given in large Doses: For Instance, a Dram of powder'd Bark may be taken at a Time, in a Glass of White-wine, or Water, and repeated every three Hours, till the Time of the Return, or Paroxysm, be over. It may, likewise, be given in Infusion, or Decoction; an Ounce boil'd in a Quart of Water, till reduced to a Pint, being drank, by large Draughts, in the Interval between two Fits.

4. It ought to be continued for a long time after the Fever has ceas'd, gradually diminishing the Dose, and the Frequency of repeating it. This is a sure way to prevent a Return.

This Remedy appears sometimes to fail, that is, the Fever returns, after a certain Quantity of it has been taken; but this is never owing to want of Efficacy in the Bark, but from Ignorance of the true Method of taking it. Thus, if the Body is not sufficiently prepar'd, it can't act as it ought, because of the Obstructions it meets with in the *Primæ Viæ*, and in the Blood-vessels. If the Bark be bad, nothing is to be expected from it; and if the Dose be too small, or not continu'd for a sufficient time, it only deadens the Fever for a time, but does not radically destroy it. It is, therefore, a groundless Prejudice, that the Bark fixes Agues, or that the Use of it is ever attended with bad Consequences, especially in the Stomach, as many pretend. The Patient is seldom thoroughly cur'd without some kind of Crisis, especially by Stool, or Urine: This latter is the best, and the Physician may be assur'd, that his Patient is safe, if he makes a greater Quantity of Urine than usual. The Bark has, likewise, been given in Clysters, with Success; but then the Quantity, usually taken by the Mouth, ought to be tripled.

This admirable Specific is, likewise, a good Alterative, and, consequently, proper in an infinite Number of Cases where there is no Fever; for it strengthens the Stomach, excites the Appetite, &c.

This Medicine is not hurtful to weak Lungs, as some imagine, Experience having often shewn the contrary; and it

has often prov'd very successful in Catarrhs, and other Kinds of Fluxions, even when accompanied with Spitting of Blood, as in the Case of the late *Marschal Tallard*. But in these Cases other pectoral Medicines are to be join'd with the Bark.

Some join with the Bark, given in Fevers, dried Arum-root, Sal Ammoniac, Cinnamon, &c. Sal Ammoniac is the most proper Way of any, being mix'd in the Quantity of half a Dram to two Drams of Bark. *Geoffroy*.

QUINTA ESSENTIA. See ESSENTIA.

CHYMICAL LIQUID QUINTESSENCES.

Put any distil'd aromatic, or essential Oil, into a clean dry Glass, and pour to it twelve times its Quantity of pure Alcohol, distil'd from Alkali, so as to contain not the least Water: Shake them together, and the Oil will disappear, and intimately mix with the Alcohol, so as to form one simple and transparent Liquor; but no Water must be contained, otherwise the Experiment will fail.

Alcohol, therefore, and essential Oil, are of such a Nature, as intimately to mix and unite together, provided they are both perfectly freed from Water; for, if only the Glass were moist, or the Breath interposed, it would hinder the Effect: And, when the Solution is perfect, and the two Liquors are thoroughly mixed together, the Addition of Water turns them white, or opake, while the Water unites with the Alcohol, and separates the Oil.

If the Alcohol, saturated with the Oil, be carefully distilled, in a close Vessel, with a gentle Fire, and several times cohobated, the Oil will thus gradually be made so volatile, as, in great measure, to rise along with the Alcohol: Whence Oils are rendered more moveable, and more subtil, and are exalted to the highest Degree of Penetrability, like that of Spirit, tho' still retaining their native Virtues. But if, with a Fire of only Ninety Degrees, a Mixture of Alcohol and these Oils be distil'd, the Alcohol will rise by itself, or only carry with it the presiding Spirit from the Oil, leaving the oily Part behind; and if, with great Care and Caution, the thinner Part be several times separated from the thicker, by repeated gentle Cohobations, the Alcohol will, at length, be so impregnated with these Spirits, as to appear almost pure Spirit itself, leaving a gross exhausted Oil behind.

REMARKS.

The antient Chymists conceived, that Fire, Air, Water, and Earth, contributed to the Composition of Bodies, with the Addition of a fifth thing, which, made of the four common Elements, enriched the Whole, by its own particular and inseparable Virtue, whereon the Colour, Odour, Taste, and Virtue, of each Body, principally depends: Therefore, they supposed, that each particular thing, consisting of four Essences, had a fifth Essence added to it, which was extremely small in Quantity, yet of very powerful Efficacy, so that, when separated, and added to another Substance, it animated the Spirits thereof: Upon which Subject *Isaac Hollandus*, and *Paracelsus*, ought to be read. There is scarce any known Method more proper than the present, for preparing Quintessences. Thus, if a single Drop of Quintessence, so made, with Oil of Cinnamon, be mixed, and drank with a Glass of *Spanish* Wine, it instantly gives a grateful Briskness to the flagging Spirits, and therefore proves an admirable Remedy in Faintings, Suffocation, and want of Spirits. Nor do we know, that the Art of Chymistry can go farther, in obtaining the Virtues of Vegetables. If a Drop of such a Mixture, of Alcohol and Oil, be let fall into the Water, it presently turns milky; which shews when Oils are adulterated with Alcohol. Hence, also, we understand the Power of Alcohol, which principally acts upon the Spirits and Oils of Plants, by mixing and fixing them intimately with itself, and thus making a Compound, which afterwards seems to act with an uniform Virtue. And though these Oils exist under very different Forms in Vegetables, yet they may still be united with Alcohol, provided there be no Water in either: And we find, that the native Spirit always adheres to this oily Matter, under whatever Form it appears. All these Preparations have a great Affinity with Fire; for such Quintessences, being taken, heat the Body, and, if the Quantity be large, scorch and burn it; when externally applied, they produce all the Effects of a sharp Inflammation, even up to a Gangrene itself.

DRY QUINTESSENCES.

Take Alcohol, wherein an aromatic Oil is dissolved; pour it upon ten times its Weight of dry Loaf Sugar, reduced to a fine Powder: Grind them together exactly, for a long time, in a glass Mortar, that they may unite; put the Mixture into a China Vessel, set it in a glass Body, kept on all Sides moderately warm, that thus the remaining Spirit, which moistens the Matter, may gently exhale, and, by means of a Still-head, be collected in the Form of a liquid Quintessence: And thus the

R r

Sugar

Sugar will remain dry in the China Vessel, yet impregnated with the Quintessence. Let it now immediately be put into a glass Vessel, close stopp'd, and preserv'd, under the Title of a dry Quintessence. By a Dram of the finest Wheat-flour, five Drams of Loaf-sugar, and grinding them dry in a glass Mortar, then adding a Dram of the liquid Quintessence, and proceeding as before, an elegant dry Quintessence will be obtain'd.

By taking a Dram of the liquid Quintessence, and half a Dram of the essential Extract of Saffron, and three Drams of fine Sugar, and as much fine Wheat-flour, and proceeding as before, nearly the same Kind of Preparation will be obtained, but more compounded.

As any of these Kinds of Oil may be dissolved in Alcohol, and so brought into an uniform Liquor, though consisting of various Sorts, and thus employed to the same Uses, it appears, that these noble Compositions may be made by various Mixtures, at the Discretion of the Artist. Hence there are infinite Ways of varying these Forms, each whereof may, for Excellence, vie with the rest.

REMARKS.

Here we see to what a Length Chymistry may reach, in affording Forms of Medicines, of great Efficacy, in little Compass: For if a Scruple of the dry Quintessence be mixed with an Ounce of Spanish Wine, we have, hence, a little Draught, containing the utmost Virtue that can be obtain'd from Aromatics. If, therefore, a prudent Physician shall justly know the Necessity and Use of such a Remedy, he may hence derive it from Chymistry for his Purpose. These Preparations have this Convenience, that they may long be preserved perfect for Use, and may be safely and commodiously carried in Voyages, Journeys, and Camps, where furnished Shops are not at hand. Here, again, we have the Bounds of chymical Perfection. *Boerhaave's Chymistry.*

QUINTANA. An Ague, the Paroxysm of which returns every fifth Day.

QUINTIANTIDOTUM. The Name of an Antidote, describ'd by *Oribasius*, *Collect. Medicinal.*

QUINUA. See AMARANTHUS.

QUIRAPANGA. The Name of a small white Bird found in *Brasil*, remarkable for nothing but the Shrillness of its Voice, which may be heard half a League. *Lemery des Drogues.*

QUISQUILA. The COTURNIX.

QUISQUILIUM. A Grain of *Cbermes*.

QUITTY. See ARBOR SAPONARIA.

QUIYA. See CAPSICUM.

QUOCOLOS. The Name of a Stone found in *Tuscany*, as hard as a Flint, somewhat transparent, and, in some measure, resembling Marble. In the Fire it loses its Transparency; and becomes less ponderous, and white; and a strong Fire readily converts it into Glass. It has no medicinal Virtues, but is used at some Glass-houses.

QUOTIDIANA FEBRIS. A Quotidian Fever.

Among the intermittent Fevers, those of the quartan and tertian Kinds happen more frequently than the quotidian, which seizes and terminates every Day, with a subsequent Intermission, for the Space of some Hours.

The Accession of this Fever happens early in the Morning, about four or five a Clock; and is accompanied with Cold and Horror, though without any Rigor. During the Paroxysm, there is a Cardialgia, accompanied with a Nausea: Some are afflicted with Head-achs, others with Deliriums, and most with a Vomiting, or Purging, or both: This State is succeeded by a Heat rather slow than excessive, whilst the Thirst is less intense than before; the Pulse, also, though before irregular, and weak, becomes more frequent, and not so hard, but considerably softer: Nor is the Urine high-colour'd, but rather crude, turbid, and of a Citron-colour. Many Patients, labouring under Quotidians, have an unfurmountable Propensity to Sleep; at last, a gentle Sweat appears on the Body; and after ten, or, perhaps, more Hours, the Paroxysm is removed, leaves the Body languid and heavy, and returns next Day at a stated Hour.

This is generally the manner in which a genuine intermitting Quotidian seizes, and proceeds; but such Quotidians as do not preserve this Type, but have their Accession either about Noon, or about the Evening, or at uncertain Periods, are call'd spurious, erratic, or anomalous Quotidians.

This irregular Species of Quotidian is frequently observ'd to be epidemical, especially during a long-protracted, irregular, and insalutary Constitution of the Weather. After the long-continued Heat in the Years 1727 and 1728, I observ'd, that, according to the Diversity of Constitutions, not only Diarrhoeas and Dysenteries, but, also, intermittent Fevers of various Kinds, especially Quotidians, were produced.

But as we are treating of an intermittent Quotidian, we shall not confound it with that of the continual Kind, which,

also, has its Accession early in the Morning, with a cold Fit; but the Heat and Languor, the Quickness and Weakness of the Pulse, the want of Appetite, and, sometimes, a colligative Sweat, remain all the rest of the time. If this Species of Quotidian is long protracted, it generally proves mortal; since the Patients, after their Strength is exhausted, die under the cold Fit.

Nor is a genuine intermittent Quotidian to be confounded with a catarrhus Quotidian; since the latter, when of a benign Nature, seizes the Patient, towards the Evening, with a Kind of gentle Refrigeration, goes off in the Morning, and is sufficiently distinguishable, by the catarrhus Defluxions with which it is accompanied. A catarrhus Quotidian, on the contrary, when of the malignant Kind, is easily known, from the remarkable Loss of Strength, and the Watching; nor does it totally intermit, but remit.

The genuine intermittent Quotidian, also, differs from other intermittent Fevers; for when a simple Tertian becomes double, the Paroxysm seizes every Day: But the Times of Accession do not alternately correspond to each other; neither are their Causes, and the Methods of Cure to be taken, the same.

If, from a Quartan, the Fit becomes quotidian, it is called a triple Quartan, and the Paroxysm does not every Day return at one stated Hour, but, every fourth Day, has the same stated Period of Accession: In these, also, the Methods of Cure are different, because they proceed from different Causes.

A genuine intermittent Quotidian, also, differs from a slow Fever, because the latter seizes after Meals, and towards the Evening, without Horror, but is accompanied with Heat in the Palms of the Hands, and Soles of the Feet: It is, also, more violent in the Night, than in the Day-time; is accompanied with Sweat, and remits in the Morning, though it does not totally intermit.

Now as the proximate Cause of every Fever is a Disorder of the nervous System, so it is certain, that the formal Cause of a Quotidian consists in a spasmodic Agitation of the nervous Parts, and the Vessels: But this preternatural febrile Commotion is brought on by a Matter quite foreign to the natural and mild Quality of the vital Humours conveyed to the Blood; though, at the same time, incapable of being mixed with it.

For the *Primæ Viæ*, the Stomach, *Duodenum*, and the largest Part of the *Jejunum*, which is furnished with Valves, are the Seats in which the peccant Matter, which, in some of its Qualities, resembles Leaven, is lodg'd; from these it is convey'd through the lacteal Vessels to the Blood and Humours, whence, being carried to the delicate and sensible internal Parts, it agitates and stimulates them to a preternatural and extraordinary Motion: And that, during a quotidian Fever, the *Primæ Viæ* abound with various Kinds of peccant, corrupted, viscid, acid, and bilious Juices, is certain, from several Circumstances: For a Quotidian is generally accompanied with Eructations, a Nausea, a Desire of Vomiting, want of Appetite, a Cardialgia, and Inflation of the Thorax, an Uneasiness of the Præcordia, and Oppression of the Breast; and, sometimes, a tensive, pungent, and biting Pain, reaching to the Back: A disagreeable, fetid, and, sometimes, a bitterish, or a somewhat sweetish and nauseous, and sometimes a plainly nidorous Taste, is perceiv'd in the Mouth; and, at last, the Fever is frequently terminated by a spontaneous Purging; but an artificial Cure is most happily effected by Emetics and Purgatives, in Conjunction with Stomachics.

But because this Fever is often protracted for many Months, it is justly to be suspected, that the Disorder is deeply rooted in the Recesses of the lower Belly; for the secretory Organs, the Glands, and glandular Coats of the Intestines, being too much relaxed, instead of a subtil, lymphatic, and salival Juice, discharge a large Quantity of an impure and serous Humour. The other Viscera, also, subservient to the Depuration of the Blood, such as the Liver, Spleen, and Pancreas, in consequence of their impaired Strength, and the languid Circulation of the Blood through them, send less pure, lymphatic, and bilious Juices, into the Organs of Digestion: Hence the Solution of the Aliments, and the Elaboration of the Chyle, are disturb'd, and many serous and corrupted Crudities generated and accumulated in the *Primæ Viæ*, which assuming a worse Quality, by their Continuance there, and being conveyed to the Blood, excite the febrile Commotion, as we have already observed.

The greater Frequency of the Paroxysms in Quotidians, than in other Intermittents, is, in my Opinion, owing to a greater Weakness of the *Primæ Viæ*; for such a remarkable Weakness greatly favours the Generation of Crudities, and is the Cause why they more quickly flow, and are collected there; as, also, why they are sooner conveyed to the Mass of Blood, and Membranes of the spinal Marrow.

Hence it is, that all Things which tend to bring on a Flaccidity of the Viscera, or generate crude and impure Juices, lay a Foundation for quotidian Fevers, which are principally incident

to those of languid Constitutions, those addicted to Idleness, those who use crude Aliments, live irregularly, drink too much Malt Liquors, indulge themselves in Grief and Care, and whose Stomachs are weakened by the Shocks of previous Diseases, or by Hæmorrhages. It is more frequent in Winter, the Autumn, and cloudy Weather, than at other Seasons; old Persons are more subject to it than others, Women more than Men, Persons of pituitous, phlegmatic, and sanguineous Constitutions, more than those of bilious and melancholic Habits. A Quotidian is, also, quickly generated, by other Intermittents, especially when the Patient uses improper Aliments, is frequently ruffled by the Sallies of Passion, has the Strength of his Stomach impair'd by strong Purgatives and Emetics, uses anodyne, hot, and spirituous Substances, or, neglecting to have his *Primæ Viæ* cleansed, preposterously uses Astringents and Specifics.

An intense genuine Quotidian, arising from a want of due Tone in the Viscera, is generally long protracted, and creates a great deal of Trouble to the Physician; but erratic and epidemical Quotidians, which depend only on a peccant State of the Juices, are more easily cured.

Quotidians which have a total Intermission of the Paroxysm, are less dangerous than others; but those which incline to the Nature of the continual Kind, and which, after the Paroxysm, leave the Strength languid, the Pulse weak and frequent, and the Body, as it were, dissolved into Sweat, are protracted for some Months; these so weaken the Patient, that he is generally taken off by them.

Quotidians succeeding other Intermittents, especially of the quartan Kind, are highly obstinate, and dangerous. Thus *Celsus*, in *Lib. 3. Cap. 15.* tells us, that a *Quartan* seldom proves mortal; but, if it degenerates into a Quotidian, the Patient is in a bad Situation: For this Circumstance indicates, that there is a great Disorder of the Viscera; and, in this Case, the Fever generally bears an Affinity to those of the continual Kind.

When, in the Beginning of the Paroxysm, bilious and pituitous Vomiting and Stools are evacuated, it is a good Sign, unless the Strength is already unhappily exhausted, by the Length of the Disease: A gentle Eruption of Sweat, also, in the Decline of the Paroxysm, and a copious Discharge of Urine with a Sediment, after the Fit, diminish the Violence of the subsequent Paroxysms, and prognosticate a happy Termination of the Fever.

On the contrary, when there is no Excretion, the Fever is long protracted, and the Viscera acquire such a Disorder, as to bring on Cachexies, slow and hectic Fevers, Consumptions, and, in those disposed to it, a Phthisis.

The same Misfortunes, also, readily happen, when Astringents, and specific Febrifuges, are preposterously used; and if, by hot, sudorific, and spirituous alexipharmic Essences, the acrid Recrements are forced from the *Primæ Viæ* into the Blood, the Quotidian soon passes into a continual Fever, accompanied with a perpetual Sweat, and a Loss of Strength.

In Patients who die of Quotidians, the cold Fit is highly intense, lasting, and accompanied with a Rigor, a Loss of Strength, and a Perturbation of Mind: They generally have two Fits of this Kind, succeeded by Heat; but, under the third Fit, the Pulse is weak, and unequal, and the Cold terminates in a mortal Rigor.

THE GENERAL METHOD OF CURE.

Since the Causes of an intermittent Quotidian are a Collection of serous and viscid Crudities in the *Primæ Viæ*, a flaccid State of the Viscera and Glands, and an obstructed Circulation of the Blood through the Vessels of the lower Belly; so the only Intentions of Cure must be,

1. To prepare, and, by proper Emunctories, evacuate the impure and peccant Juices from the *Primæ Viæ*.
2. To corroborate the Viscera, whose Tone is impaired; and, by that means, prevent the farther Generation of Crudities. And,
3. To restore the free Circulation of the Blood through the abdominal Viscera and Intestines, which are the Organs destin'd for the Digestion of the Aliments, and the Elaboration of the Chyle.

The first of these Intentions is excellently answered, by inciding and abstergent Substances, and neutral Salts; the most efficacious of which are depurated Sal Ammoniac, the digestive Salt of *Sylvius* prepared of the Caput Mortuum of urinous Spirit of Sal Ammoniac, vitriolated Tartar, the *Arcanum duplicatum*, *Epsom* Salt, *Sedlitz* Salt, and antimoniated Nitre: Such Substances, also, answer this End, as abound with an acrid aromatic Salt; such as the Roots of Cuckowpint, *Calamus aromaticus*, white Burnet, true Costus, and Zedoary; together with *Winter's* Bark, Ginger, and white Pepper; which, when reduced to a Powder, and mixed with the above-mentioned Salts, with the Addition of a Drop or two of some carminative Oil, make an excellent antifebrile Medicine.

For answering the first, as well as the second Intentions, that is, gently to evacuate the Sordes by Stool, and, at the same time, to corroborate the Tone of the Stomach and Intestines, and restore their disturbed Motion to a due State, the most efficacious Medicines are, the balsamic Pills of *Becher*, those of *Stahl*, and those directed by myself; as, also, the *Pilule Alophanginæ*, the *Pilule de Succino Cratonis*, and the *Pilule Solenandri*, especially if exhibited in Conjunction with the above-mentioned Salts.

But, for restoring Strength to the abdominal Viscera, and to prevent an Afflux of impure Juices to the Organs of Digestion, the most efficacious Medicines are, bitter Elixirs, mixed with Chalybeates, such as my temperate balsamic Elixir, prepared without Spirit of Wine, with an alkaline Liquor, or Essence of *Cascarilla*, mixed with Essence of Ginger; or stomachic Elixirs, such as my Elixir, or that of *Michaeli*, with the Addition of a few Drops of a chalybeated Tincture, prepared of the chalybeated Flowers of *Sal Ammoniac*, with rectified Spirit of Orange-peel.

By these, also, the Circulation of the Blood through the abdominal Vessels, and the Organs of Digestion, is excellently promoted: However, if the Quotidian is obstinate, and supported by an irregular Regimen, the most efficacious Medicines are, medicinal Waters, especially those of the hot and cold Kinds; such as the *Caroline* and *Egran* Springs, drank warm; which, used with a proper Regimen, and an Intermixture of bitter, balsamic, and anticachectic Medicines, dilute the viscid Sordes, evacuate them by Stool and Urine, together with the serous Recrements, remove Infarctions, and restore the free Circulation of the Blood.

But the particular Method of using these is to be varied, according to Temperaments, Ages, the Seasons of the Year, the Constitution of the Patient, the State of the *Primæ Viæ*, the Sex of the Patient, and the Cause of the Disease; to each of which Circumstances, both the Dose of the Medicines, and the manner of their Exhibition, are to be accommodated. It is, however, to be observed, in general, that, on the Hours free from the Paroxysm, saline Powders are to be exhibited, with inciding Liquors; and, on the third or fourth Day, the Body is to be rendered soluble, by proper Pills, but in such a manner, as that their Operation may be over before the Paroxysm begins; and the Sweat, about to make an Eruption in the Decline of the Paroxysm, is to be promoted, by Rest, and drinking warm Liquors; after which, we are to subjoin corroborative, bitter, chalybeate, and antifebrile Medicines.

PRACTICAL CAUTIONS, AND OBSERVATIONS.

Quotidian intermittent Fevers are to be treated with great Circumspection, lest they should degenerate into other chronic and dangerous Diseases. The Patient is, in a particular manner, to abstain from astringent and paregoric Medicines, large Quantities of precipitating earthy Substances, and all drastic, purgative, sudorific, and emetic Medicines.

It, also, contributes greatly not only to promote the Cure, but, also, to prevent the Return of a quotidian Fever, to avoid all Commotions of Mind, especially Sorrow, and long-protracted Anxiety; and to guard against insalutary Aliments, the Use of Wine, and Refrigeration, especially of the Abdomen.

As Nature often happily terminates Quotidians by a critical Flux, so her Indications are to be followed; and the Physician is to act in Concert with her salutary Efforts: For which Reason, the Patient is not to be reduced to a sudorific Regimen, nor are Sweats to be forced by Medicines: But we ought, rather, to endeavour, that the peccant Matter, and the *Primæ Viæ*, should be prepared and disposed for a Flux; which End is excellently obtained, when, a few Hours before the Paroxysm, a gentle Laxative, such as the *Pulvis Cornuachini*, or the *Pilule Balsamicæ*, is exhibited with some of the above-mentioned Salts.

Because Quotidians are accompanied with a Vomiting, which proves beneficial to the Patient, this should be promoted by proper Doses of well-chosen Medicines, exhibited seasonably. Hence it is sometimes absolutely proper, by means of Emetics, to excite a Vomiting before the Paroxysm. I remember, in legitimate Quotidians, which used to have their Accession about Five in the Morning, I have often, towards the Evening before the Crudities were conveyed from the Organs of Digestion to the Blood, exhibited a gentle Vomit, consisting of fifteen Grains of *Ipecacuanha*, and half that Quantity of the *Pulvis Cornuachini*: By this means, a Vomiting was happily excited, and sometimes a Purgine, and the Fever, becoming considerably milder, was afterwards easily removed, by other Medicines.

If a Quotidian lasts for a Month, or longer, and seems, as it were, to degenerate into a slow Fever, we may commodiously exhibit one Grain of emetic Tartar, dissolved in some proper Liquor; by which means, I have known an incredible Quantity of stagnant bilious Juices thrown up, and the Patient greatly relieved.

When

Q U O

When Quotidians are accompanied with a Loathing of Food, a pressory Pain, or Inflation of the Stomach, we are to apply to the epigastric Region small Bags, either dry, or boiled in Wine, consisting of the Herbs Mint, Wormwood, and Rosemary; the Flowers of Spike and *Roman* Chamomile, Cloves, and Nutmegs: These Bags, when applied after the Paroxysm, are highly beneficial, by effectually promoting Perspiration and Sweat.

In Quotidians of the legitimate Kind, we are to deal very cautiously with Febrifuges; but, in epidemic and erratic Quotidians, besides the above-mentioned Medicines, we may, also, safely exhibit antifebrile Specifics, and that Electuary, the Basis of which is *Peruvian* Bark, and that of *Cascarilla*; since, by this means, a Solubility of the Body, and copious Stools, have

Q U O

been procured, without any Uneasiness to the Patient: But, in quotidian Fevers, the Bark of *Cascarilla* is justly preferable to the *Peruvian* Bark, because the former is more corroborative, and astringent, than the latter.

Venesection is rarely proper in Quotidians which are already accompanied with a Weakness, especially of the Stomach, and generally complicated with something of a cachectic Nature: But if there is a considerable Plethora, especially arising from a Suppression of the Menses, or Hæmorrhoids, and if the Urine is tinged, or the Patient accustomed to drink Wine, a Vein is to be opened in the very Beginning of the Disorder, lest the Fever should be increased, and, according to the Observation of Physicians, slow, hectic, and apostematous Fevers brought on. *Hoffman*.

R.

R.

R. For the Signification of this Letter in the Chymical Alphabet, see ALPHABETUM CHYMICUM.
R in Prescriptions, imports *Recipe*, Take.

RABDOIDES SUTURA. The Sagittal Suture.

RABEOIA. The Roots of the *Flaminula Major*. *Rulandus*.

RABIEL, or ROHEL. Dragons Blood. *Rulandus*.

RABIES. See HYDROPHOBIA.

RABIRA. Tin. *Rulandus*.

RACEMUS. A Bunch of Grapes; or of Ivy-Berries; or of any other Fruit which grows in Clusters.

RACHAMMELCA. A new Term coined by *Dolaeus* from the Hebrew Word *Rechem*, signifying the Uterus, and *Melech*, a King. By this Word he intended to express what they call the active Principle, or the *Plastic Spirit of the Uterus*.

RACHI, or RACHO. Mercury. *Rulandus*.

RACHITÆ, or RACHILÆ. The Muscles belonging to the Back. *Blancard*.

RACHITIS.

This Disorder, generally known by the Name of *Rickets*, is a kind of partial *Tabes*, and consists in an unequal Nutrition, by which some Parts are deprived of their due Nourishment, and waste away, whilst others receiving more than enough, are preternaturally increased with an Incurvation of the Bones and Spine of the Back.

This is a new Species of Disorder; for it only made its first Appearance in *England* about the Middle of the Seventeenth Century; and was afterwards spread through all the Northern Parts of *Europe*. It principally discovers itself by these Signs: The Disorder appearing about the ninth Month of the Child's Age, or later, the Proportion of various Parts of the Body gradually becomes irregular; the Skin lax, the Abdomen large, and, as it were, turgid with Flatulences. The Muscles are consumed by an Atrophy, whilst the Joints of the Arms, Hands, Knees and Feet, become protuberant. The Bones are also render'd incapable of sustaining the Body, and the Spine of the Back is frequently enervated. Hence the Patient is hardly able to walk, and often intirely incapable of moving. Then the jugular and carotid Arteries become tumid, the Head large, and frequently nodding, in consequence of the weak and flaccid State of the Neck. The Genius is for the most part more acute than is usual at that Age. The Chest is narrow, and, as it were, compressed on the Sides; the Sternum acuminate, and the Extremities of the Ribs full of Knots. As the Disorder increases, it is accompanied with a slow Fever, a Cough, a Difficulty of Breathing, and other Symptoms which generally continue till the Patient dies. But 'tis carefully to be observed, that there are certain Degrees and Periods of Duration in the *Rickets*, which don't produce the same Symptoms in all Patients; but in some, those of a violent, and in others, those of a mild Kind.

In dissecting those who die of the *Rickets*, sometimes one, and sometimes another of the Viscera is found corrupted; for in some, the Liver is preternaturally large, scirrhus, and adhering to the Diaphragm, whilst the Mesentery and Pancreas are obstructed, and full of indurated Glands. In others, the Lungs adhere either to the Pleura or Back, and are either livid or full of Vomicas. In others, the Pericardium is full of Water. Most Authors, among whom are the celebrated *Glisson*, *Bonetus*, and *Heister*, unanimously agree, that in Patients who die of the *Rickets*, the Beginning of the Spinal Marrow is preternaturally hard and obstructed; the Space between the Dura and the Pia Mater full of Water; the Brain excessively large, and the carotid and jugular Veins smaller than their correspondent Arteries.

Induced by Experience and the Authority of these Authors, we shall, as the Cause of the *Rickets*, assign the intercepted Ingress of the nervous Fluid into the spinal Marrow, either in consequence of its Obstruction or Compression. Hence the Nutrition of those Parts which receive Nerves from the spinal Marrow, such as the Arms and Legs, must necessarily be destroyed; whilst, on the contrary, those are preternaturally nourished, whose Vessels are pervious, and receive too large a Quantity of nutritive Juice; as is observable in the Heads of *rickety* Patients, which, in consequence of the intercepted Influx of the nutritive Lymph into the spinal Marrow, receive too much Nourishment; which not only renders them preternaturally large, but also their Faces ruddy and well-coloured. Nor is the Brightness of their Genius to be otherwise accounted for, than from the Soundness of the Brain and Cerebellum, which duly discharge their respective Offices. For which reason, the Parts to which Nerves are distributed from the Brain, are generally in a good Condition.

'Tis also obvious why the Bones are incurvated and deformed with Knots about their Epiphyses; for because the Muscles and their Ligaments, by which the Bones are joined, are not in this Disorder duly nourished, whilst the Nourishment is copiously conveyed through the Arteries to the Bones; it generally happens that the Extremities of the Bones, which in Children are of a soft Texture, are, in consequence of the small Resistance, distended and elevated into Tubercles. And since during this Nutrition, the Bones perpetually increase, and the Muscles become smaller and shorter, the Elongation and Extension of them is easily retarded by the Muscles which adhere to them. Hence an Incurvation of the Bones happens; and so much the more easily, because at this Age they are highly soft and flexible. Nor is the Distortion of the Spine of the Back owing to any other Cause, than the Flaccidity and the Destruction of the natural Tone of the bony Processes, Cartilages, Ligaments, and Muscles, connecting the Vertebrae of the Back; and during this Flaccidity, these Parts, upon inclining the Body, recede too far from each other, and are too much distended to be again restored to their natural Situation.

The immediate Cause of the *Rickets* is a viscid Tenacity of the Juices, which being separated from the inspissated Blood, are deposited on the spinal Marrow; and, by compressing or obstructing its Pores, hinder the due Influx of the subtile nervous Fluid into it; so that it cannot be farther distributed through the Nerves.

Among the remote Causes of the *Rickets* produced by an improper Regimen, we may reckon all those Circumstances which bring on an Atrophy; for 'tis certain, from Experience, that whatever disturbs Digestion, and generates a thick viscid Chyle, unfit for Nutrition, has a Tendency to bring on the *Rickets*.

But nothing more effectually contributes to the Production of this Disorder, than an Air which is cold, cloudy, and impregnated with various hurtful Exhalations; since such an Atmosphere, partly by debilitating the Tone of the Skin, retains the pituitous Sordes in the Body; and partly by relaxing the Lungs, hinders the intimate Mixture of the Blood in them, and prevents its due Distribution through the whole Body. A memorable Instance of this is found in *London*, which, in consequence of the prodigious Quantity of Exhalations, and the Particles of the Smoke, arising from fossile Coal, is found very fit, not only for producing, but also for supporting the *Rickets*. Nor is it surprising why, from the same Cause, this Disorder is most frequent in maritime and marshy Places, as also in the Spring and Autumn: And why in Towns situated by large Rivers, incommoded with a moist Atmosphere, clouded with saline effluvia, or the sulphureous Smoke of fossile Coal, so many Children are subject to the *Rickets*.

Nor shall I hesitate to affirm, that the Stagnation of the Humours in the spinal Marrow, is greatly promoted by the foolish Custom of Nurses, who, for whole Days, carry Children in their Arms, wrapt up in a Cloak; and not only, for a long time, keep the Spine of the Back in an incurvated Posture, but also bend the Legs unequally. Hence crooked Backs and Legs are not only produced, but a favourable Foundation laid for the *Rickets*. The like also happens, when Infants, by a Blow or Fall, have the Spine of their Back distorted; for which reason gibbous Children easily become subject to the *Rickets*.

Nor is it to be doubted, that previous Diseases dispose not only to a Consumption, but also to the *Rickets*. But among all Diseases, none so effectually contribute to the Production of this Disorder, as those which, by bringing on a Deposition of Humours on the spinal Marrow, suspend and prevent the free Ingress and Egress of the nervous Fluid to, and from it. Thus, in Practice, we often find the *Rickets* arising from this Cause, after an ill-managed Small-Pox; as also after the Repulsion of the Itch, the Crusta Lactea, or a scald Head.

As for the Prognostics of this Disease; if it is violent, and lasts till the fifth Year of the Patient's Age, or longer, it is not to be cured without Difficulty; generally renders the Body languid and deformed; and unless, as Youth advances, when the whole Body undergoes a great Change, it is totally removed, it becomes incurable during the whole of the Patient's Life. Nor is it to be cured with less Difficulty, when it is hereditary, or appears in the first Month after the Birth of the Infant. When the *Rickets* are succeeded by a Phthisis, accompanied with an hectic Fever; by a Dropsy, an Asthma, or a Diarrhœa; only faint Hopes of the Patient's Recovery are to be entertained. But the *Rickets* which arise from a Fault of the Regimen or Air, which are succeeded by the Small-Pox, Itch, or other Efflorescences of the Skin, and are not accompanied with a great Incurvation of the Bones, and an Inability to Motion, are more easily cured.

When viscid, tough and pituitous Humours deposited on the spinal Marrow, are the Cause of the *Rickets*, the first Intention of Cure is to resolve the Viscidity of the Juices, remove Obstructions, and by that means promote a free Circulation of the Humours through all the Body. For this purpose, in order to remove the Fountain of the Disorder lodged in the Primæ Viæ, we are, above all things, to use gentle Laxatives; not neglecting, if it is necessary, and the Constitution of the Child admits, the Use of mild Emetics, consisting of a few Grains of the Root of Ipecacuanna, exhibited with Sugar and Cinamon-Water, prepared without Wine, or reduced to the Form of an Electuary, with some proper Syrup; for by these means the viscid Sordes, collected in the Stomach and Intestines, are not only excellently eliminated, but also by the Stimulus of such Medicines, a due Resolution of the Humours, and an Opening of the obstructed Vessels, are successfully obtained: Only such stimulating Medicines are not to be exhibited to Patients whose Strength is exhausted, who labour under any Disorder of the Mesentery, or a violent Obstruction of the Viscera; since, in such Cases, it is more expedient to exhibit Medicines of the deobstruent kind.

To the Medicines already recommended, we may also, now and then, add those of a gently resolvent kind, as Diaphoretics generally are; such as the Tincture of Tartar, the acrid Tincture of Antimony, and Preparations of Cinnabar; which in the *Rickets* are preferable to Mercurials, and highly beneficial in eliminating the serous Impurities, partly by Perspiration, and partly by Urine; especially if they are exhibited in such Infusions as dilute and purify the Blood.

But in particular, for removing the Obstruction of the spinal Marrow, and restoring the Influx of the nervous Fluid into it, various Authors recommend Frictions of the Spine of the Back, Arms and Legs, with warm Linen-Cloths; as also Fumigations of Frankincense, Amber, Mastic, and Olibanum. But I can, from Experience, recommend as the most effectual Remedy, Baths of sweet Water, boiled with Nervous Herbs, such as Marjoram, Lavander, Mother of Thyme, Rosemary, Chamomile and Baum. In such Baths, the Patient is to be frequently immersed, and have the Spine of the Back and Joints rubbed and anointed with the following Nervous Ointment.

Take of human Fat, and expressed Oil of Nutmegs, each half an Ounce; of Peruvian Balsam one Dram; and of the Oils of Rue, Lavander and Cloves, each thirty Drops.

By these means I have often seen many Patients afflicted with the *Rickets*, not only surprisngly relieved, but also totally recovered.

But these Measures are carefully to be accompanied with a proper Regimen; for the Patient is by no means to use flatulent viscid Aliments, or such as are of difficult Digestion: But he may frequently use weak Broths, prepared of Fowls or Veal, with the aperient Roots of Asparagus, Fennel, Succory, Smallage, Celeri, Parsley, and River-Crabs bruised. Then, in order to corroborate his Stomach, temperate stomatic Elixirs, such as the Visceral Elixir, are to be mixed with his Aliments. His Drink is to be thin, and during the Time he is suckled, the Milk should be good and sufficiently thin; adding, at the same time, proper Exercise suited to his Age; such as Gestation, that his languid Body may be only gently exercised. If he is coltve, his Body is to be render'd soluble by a Laxative, or a Glyster. If the Disorder is either brought on, or supported by a bad State of Health in the Nurse, the same Medicines are to be exhibited in larger Doses to her.

For an Incurvation of the Spine, and Members variously distorted, we must also recommend Swathing, and the Use of proper Stays, provided due Care is taken to do no Injury by them; since often, by these means, the Infant is thrown into another more dangerous Disorder. *Frederic Hoffman.*

Children are never born with the *Rickets*; for this Disorder is rarely incident to them before they are nine Months old, and hardly ever seizes them after they are two Years of Age, but frequently happens in the intermediate Space between these two Periods.

This Disease is most incident and fatal to Children whose Parents are of a lax and weak Constitution; who are addicted to Idleness and Effeminacy; who live luxuriously, or use pinguous Aliments, Dishes prepared with Sugar, a small Quantity of Bread, sweet Wines, and large Quantities of warm Water; who are exhausted by chronical Disorders, Venery, Age, a Tabes, especially of the Venereal Kind, and repeated Gonorrhæas; for such Persons propagate a weak and languid Offspring.

When the Nurse labours under such Misfortunes, the *Rickets* are more quickly brought on, and increased in the Child.

Especially if the Disorder is treated with a cold and moist Regimen, and the Infant fed with aqueous and mucous Substances, crude Summer-Fruits, Fish, farinacious unleavened Bread; if the Infant has long laboured under an autumnal intermittent Fever, a chronical or acute Disorder; if he has had the Itch, an Herpes, or Ulcers, suppressed, or ill-cured; if he is enervated by Baths, Fomentations, Liniments, Ointments, or moist Vapours; if he remains constantly without Motion in a perforated Chair, with the inferior Parts of his Body naked.

This Disorder, when beginning, is known in those who cannot walk, first, from the Age; secondly, from the preceding Causes; thirdly, from the Brothers or Sisters of the Infant being seized with the like Disorders. Fourthly, from a flaccid Swelling of the Head and Face. Fifthly, from the lax State of the Skin. Sixthly, from the Swelling of the Abdomen. Seventhly, from the Leanness of the other Parts, especially of the Muscles. Eighthly, from the Protuberance of the Epiphyses at the Joints of the Radius, Ulna, Humerus, Knee, Tibia and Fibula. Ninthly, from the Largeness of the Jugular Arteries and Veins, whilst the others decrease.

But in Children who have begun to walk, the approaching *Rickets* are known, first, from the before-enumerated Signs; secondly, from a slow infirm Manner of Walking, a falling forwards, and an Instability which terminates in a perpetual Desire of Sitting, which soon degenerates into a State of constant Decubiture, and at last an Inability of moving any of the Joints; the Neck in the mean time becoming flexible, and the Head nodding: And, thirdly, from the preternatural Ripeness and Force of the Genius; the genuine Exercise of the Senses, the Appetite and Digestion remaining almost sound and uninjured.

When the *Rickets* are of a longer Standing, the Patient's Head is preternaturally large, and its Sutures gaping; the Thorax at the Sides is compressed to the Sternum, which rises in a kind of sharp Arch; the Extremities of the Ribs are full of Knots; the Abdomen protuberant, and the Teeth carious and black; which Symptoms gradually increasing, frequently thro' the whole of the Patient's Life, produce the like terrible Disorders, especially a Spina Ventosa, and a Caries of the Bones.

During the whole Course of the *Rickets*, a slow Fever preys upon the Body, till the Patient dies; and then in the Carcase all the Fibres, Membranes, Vessels and Viscera are found soft and flaccid, while the Humours are colliquated and mucous.

Hence the immediate Cause of the *Rickets* is, a languid, mucous Cold and vapid Cacochymy, perhaps complicated with a latent Venereal Taint, and accompanied with a lax and flaccid State of the solid Parts.

The Cure of the *Rickets* is most effectually produced by light, easily-digested, dry, lean Aliments, season'd with mild Aromatics, and frequently exhibited, tho' in a small Quantity; by drinking a small Quantity of generous Liquors, especially of Ale, tho' not old, but long boil'd and thick; by a dry and somewhat hot Air; by wearing very dry, and warm Clothes, especially such as are made of Wool; by lying upon Couches prepared of aromatic, corroborating, and drying Herbs, laid upon Boards, in the upper Rooms of the House; by Gestation, Concussion, Oscillation, Riding in a Chariot in rough Roads; by much dry and warm Friction, especially of the Abdomen and Spine, performed with Clothes, impregnated with the Smoke of Aromatic Substances; sometimes by the repeated Application of Cantharides, by gentle Emetics, frequently tho' prudently repeated; by Purgatives, and then by corroborating Medicines, exhibited for some Days successively; and lastly, by the long-continued Use of corroborating, drying, antiscorbutic Medicines, and such as rouse the Spirits. Hence we understand the Uses of Immersion in cold Water, for the Cure of this Disorder, which, however, is not to be put into Practice, till the Viscera of the Abdomen are, in some measure, eased of the Load of Humours which oppress them. Hence, also, the proper Use of Liniments may be understood, which ought to be of the nervous Kind, and applied to the Abdomen, and Spine of the Back; but not to the prominent Parts of the affected Bones.

The best Aliments for Children labouring under the *Rickets* are:

1. Well fermented Bread and Biscuit, mixed with a small Quantity of Saffron, Nutmeg, Cardammons, Cinnamon, Seeds of Celeri; and other grateful and corroborating Aromatics.
2. Lean Pigeons, Fowls, Rabbits, Mutton, Kid and Veal, gently roasted, cut small and mixed with Biscuit, Salt, and a little Parsley, Thyme, and Nutmeg.
3. Millet and Barley, boil'd with Water and Raisins; and then seasoned with a little Wine and mild Aromatics.

The most proper Drinks for Persons labouring under the *Rickets* are,

Ripe, red and astringent French Wines, an Ounce of which is to be exhibited three or four Times a Day.

Half an Ounce of Hippocratic Wine, exhibited at the same Time.

Brunswick Mum, British Ale, and that Species of Dutch Ale, which is sold at twelve Florins.

With these Malt Liquors, in the Summer Time, may be mixed an equal Quantity of medicated Chalybeate Water, but rather of the Spaw Waters.

Take of the following recent Leaves dried in a Shade, *viz.* of the Male Fern, three Pounds; of Marjoram, Baum, and Mint, each two Handfuls: And of the following recent Flowers, also, dried in a Shade, *viz.* of Melilot, sweet Trefoil, Elder, and Roses, each two Ounces. Reduce to a fine Powder. Mix with double the Quantity of Barley-Chaff; and put all into Bags for Couches, on which the Patients are to lie; these are to be carefully preserved from Moisture, and frequently dried.

Take of Benzoin, Mastick, Olibanum, Amber and Frankincense, each one Ounce; reduce to a Powder; of which throw a little upon live Coals, and the Steam arising from it is to be received in Clothes, for rubbing the Parts.

Take of the Roots of Ipecacuana, one Scruple; of white French Wine, one Ounce; and of Sugar, two Drams; infuse for a whole Night; and when depurated, exhibit in the Morning. Let this be repeated every fourth Day for five Times.

Take of the best Rhubarb, half an Ounce; of Citrine Myrobalans, without the Kernels, three Drams; and of the Troches of Agaric, two Scruples. Infuse in four Pints of cold strong Beer, for twenty-four Hours; and let the Patient use this for common Drink for a Month: But if it should prove too purgative, it may be diluted with an equal, or, if necessary, a greater Quantity of other Ale.

The corroborative, drying, exciting and antiscorbutic Herbs proper for curing the *Rickets*, are, Agrimony, Betony, the Bark of Caper Roots, Spleen-wort, Succory, Dorder, Sanicle, Endive, Male Fern, Liver-wort, Harts Tongue, Baum, Myrobalans, Osmund Royal, Polypody of the Oak, the Leaves and Acorns of the Oak, Rhubarb, the Leaves and Root of the Bramble, white Maiden Hair, Scabious, the Bark, Flowers and Leaves of the Tamarisk, Trichomanes, and Male Speedwell.

Of these medicated Ales, Wines, and Infusions, may be prepared and exhibited with great Success; as also Conerves, and other Things of a like Nature, thus:

Take of Agrimony, Spleen-wort, Fern-Root, Harts Tongue, the Root of Polypody, and white Maiden Hair, each two Ounces. Having cut these small, mixed them, and put them in a Linnen Cloth, infuse them in twelve Pints of cold Ale, to be used for common Drink.

Or,

Take of the Leaves and Flowers of Betony, three Ounces; of the Barks of the Roots of Capers, Tamarisks, and wild Bramble, and of Trichomanes, each two Ounces; and of Filings of Steel, half an Ounce. Infuse in eight Pints of cold White Wine, of which one Ounce is to be exhibited thrice a Day.

Take of Boyle's *Eus Veneris*, two Grains; which are to be exhibited every Evening in Canary Wine for three Weeks.

Take of the Filings of Steel, one Ounce; of the strongest distill'd Vinegar, ten Ounces; and of Sugar, three Ounces. Boil all together gently for twenty-six Hours in a tall Phial; and let the Liquor, when filtrated, be kept in a close Vessel. Six Drops of it are to be exhibited every Morning and Evening in a little Spanish Wine.

Boerhaav. Aph. & Mat. Med.

RACRI, RAAN, or RANAC. Sal Ammoniac. *Rulandus.*

RADIÆUS, or RADIALIS. *Winflow* takes Notice of three Muscles under this Name; the first is the *Radialis Internus*, otherwise called *Flexor Corpi Radialis*. See *FLEXOR*.

The second is the *Ulnaris Externus*, or *Extensor Carpi Radialis*. This Muscle *Winflow* divides into two. In many Subjecs, says he, we find these two Muscles entirely distinct from one kind to the other, and they may be named *Radialis Externus primus* & *Radialis Externus secundus*, regard being had to the Insertion of their Tendons. Sometimes the two fleshy Portions adhere closely together, appearing to make but one Body, but the Tendons are always distinct and separate.

The first is inserted above, in the *Christa* of the external Condyle of the *Os Humeri*, below the Insertion of the *Supinator Longus*. The second is inserted in the same Condyle,

below the Insertion of the first; and in the neighbouring articular Ligament. From thence the two fleshy Bodies run down very close together; and having reached the Middle of the Outside of the Radius, each of them terminates in a long Tendon.

The *Radialis Externus*, together with the *Radialis Internus*, turns the inner Edge of the Hand directly toward the *Styloide Apophysis* of the Radius.

With the *Ulnaris Externus* it inverts the Hand, turning the Convex Side of the Metacarpus toward the lower Extremity of the Bones of the Fore-arm. It likewise moves the second Row of the Carpus on the first, and thereby increases the transverse Fold on the Convex Side of the Carpus. This Motion also encreases the Angle, which the Back of the Hand naturally makes with the Outside of the Fore-arm; and therefore, according to the common Language, it would be more properly term'd a Flexion outward, than an Extension.

This Muscle acting alone, draws obliquely, and toward the external Angle of the Radius, that Portion of the Hand, which answers to the first Metacarpal Bone, and to the Index; but not without some Difficulty.

Each of the two *Radiales Externi* may act separately, and, consequently, have distinct Uses; since their Tendons having passed the Annular Ligament, are inserted at some Distance from each other; and thereby one of them seems to be fitted to co-operate with the *Radialis Internus*, the other with the *Ulnaris Externus*; and they both serve conjointly to keep the Hand in its true natural Situation. *Winflow.*

RADIATED FLOWERS. See *FLOS RADIATUS*, under the Article *BOTANY*.

RADICALIS. Radical. This, when join'd with *Humor*, seems to imply much the same as innate.

RADICISECA. A Servant of the ancient Physicians, employ'd in gathering, and cutting Roots and Herbs, and preparing them for Medicinal Uses.

RADICULA. A Name for the *Raphanus*. According to *Blancard*, the *Romans* call'd the *Lychnis*, *Sylvestris*, *quæ Saponaria*, *vulgo* by this Name.

RADIUS, in Anatomy, is the Name of a Bone in the Fore-Arm. See *BRACHIUM*.

RADIX ALBA, in *Hippocrates*, is the Root of the *Dracunculus*, as explained by *Galen*, in his *Exegesis*.

RADIX BEZOARDICA, a Name for the *CONTRAVERVA*.

RADIX CARLO SANCTO.

This Root is found in temperate Soils, in *Mechoacan*, a Province of *America*. Its Bark is easily separated from it, is of an aromatic Smell, and of a bitter and somewhat acrid Taste. The Root itself consists of very slender Fibrils, which are easily separated from each other. The Bark is accounted sudorific, and corroborates the Stomach and Gums. If chew'd it procures an agreeable Breath. It is good for Scurvies, Catarrhs, Epilepsies, hastening Deliveries, and removing Hernias, and the Small Pox, if taken either in Powder or in the Form of a Decoction. The *Spaniards* have called it by the Name of *St. Charles*, on account of its uncommon Virtues. *Lenery des Drogues.*

RADIX CAVA. A Name for the *Moschatellina Foliis Fumariæ bulbosæ*; *de qua Cordus.*

RADIX CHINA. See *CHINA*.

RADIX DULCIS. A Name for the *Glycyrrhiza*, *capite echinato*.

RADIX IDÆA. A Name for the *Ruscus*; *Angustifolius*; *Fructu folio innascente*.

RADIX RINZANGO. *Sive Bengalenfis*. Supplem. 396.

This came in Use but very lately, for I find no mention of it in any Pharmacopœia, or Catalogue of Plants. As to its Virtues, it is recommended by *Dr. Tancred Robinson*, as a very potent Cephalic.

RADIX SIMAROUBA, Offic. *Sima Ruba*, Geoff. *Tract.* 297. Ind. Med. 90.

This is the Root of a *West India* Plant, which produces the *Cayan* Wood, remarkable for being very light. The Root and Bark are said to be excellent Astringents, proper in all Sorts of Loosenesses, and especially in Dysenteries. The Dose of the Root is an Ounce cut in small Pieces; and of the Bark two Ounces; boil'd in three Pints of Water to a Pint. This Decoction the Patient uses for his common Drink, till he is cured. *Geoffrey.*

RADIX URSINA. A Name for the *MEUM*.

The five Opening Roots are, those of *Apium*, *Asparagus*, *Fennel*, *Parsley*, and *Butchers Broom*: These are by some Authors called the *greater Opening Roots*, to distinguish them from the lesser, which are those of *Caper*, *Eryngo*, *Dogs Grass*, *Rest Harrow*, and *Madder*.

RADIX SANCTÆ HELENÆ. *Cyperus Americanus*. *Hernand.*

This is a pretty long Root, full of Knots, black without, white within, and of an aromatic Taste, almost like that of *Galangal*. It is brought dry from the Port of *St. Helena*, in

in the Province of *Florida* in *America*, where it grows. This Root is good against Pains of the Stomach, and is of an highly aperient Nature. It is recommended against the Nephritic, Colic, and a Difficulty of discharging the Urine. It is, by some, bruised and applied to weak Parts, in order to strengthen them. *Lemery Traité des Drogues*.

RADULA. A Raspatory.

RAIA. Offic. Salv. de Aquat. 149. Schonef. Ichth. 57. Mer. Pin. 185. Bellon. de Aquat. 80. *Raia Clavata*, Aldrov. de Pisc. 450. Rondel. de Pisc. I. 353. Gefn. de Aquat. 795. Charlt. Pisc. 11. Raii Ichth. 74. Ejusd. Synop. Pisc. 26. **THE THORNBAC.**

This is a Sea-Fish, of which the Flesh, Liver, and Gall, are used in Medicine. The Flesh is analeptic, and is said to increase Venereal Vigour. The Gall is recommended against Dimness of Sight, and Exulcerations of the Eye; and is a Remedy for the Itch.

Pliny recommends the Gall for Disorders of the internal Ear, *Lib. 32. Cap. 7.* See **BATIS**.

The Thornback is a Sea-Fish well known, of which there are several Species. Some have their Backs almost all over diversified with white Points like Stars; others have none but on the Tail; another Kind taken at *Marseilles* is greatly esteemed.

This Fish is of a blackish Colour, multiplies fast, feeds upon small Fishes, and lives in muddy Places near the Shore. It affords nourishing, solid and durable Food; because the viscous Juices it contains adhere to the Vesicles of the Fibres, and make it hard of Digestion. It is subject to cause Wind, and produce heavy and gross Humours, especially if eaten before it is kept some Time. It contains much Oil and volatile Salt. It agrees at all Times with young, bilious and sanguine People, who have good Stomachs. In some Places it is dried and will keep long, but it does not thus yield good Food. *Lemery of Foods*.

RAIZ-D'EMPOSE. A Name for the *Methonica Malabarorum*.

RALLUS. The Name of a River-Fowl, a Sort of Moor-Hen, frequent in *Italy*, and other Places. The Fat is esteem'd resolutive, emollient, and Anodyne. *Lemery des Drogues*.

RAMAG. Ashes. *Rulandus*.

RAMALIS VENA. The *Vena Portæ*. *Theophilus de exalta Retrimentorum Vesicæ Cognitione*. C. 2.

RAMED. Rhubarb. *Rulandus*.

RAMENA-POU-MARAM. The Name of a very large and tall Tree, which grows in *Malabar*; to which I find no Medicinal Virtues ascribed.

RAMENTUM. A Strigment, or small Corpuscle, abraded or scrap'd from any Body.

RAMEX. The same as **HERNIA**.

RAMIGRI. Colophony. *Rulandus*.

RAMUS. The Branch of a Tree; or Ramification of a Vessel in the Body.

RANA. Offic. Mer. Pin. 169. Bellon. de Aquat. 54. Schonef. Ichth. 59. Rondel. de Aquat. 2. 218. Charlt. Exer. 27. Aldrov. de Quad. Ovip. 89. *Rana Aquatica* Schrod. 5. 331. Jonf. de Quad. 130. Schw. Rept. 155. Raii Synop. A. 247. *Rana aquatica & imoxia*, Gefn. de Quad. Ovip. 46. **THE COMMON FROG.**

Frogs are of different Sizes and Colours, according to the Places where they are bred. Sea-Frogs are monstrous, and not used for Food. Land-Frogs, called in *Latin* *Rana Sylvestres*, nearly resemble Water-frogs, only they are smaller, and not eat; but Water-frogs are much used.

The Water-Frog is an amphibious Animal; but keeps most in the Water, as in Rivers, Marshes, Ponds and Fountains. It feeds upon Flies, Worms, Leaches, Snails, Insects, and Herbs which grow in the Water; sometimes also they devour their own Species, for small Frogs are often found in the Mouths and Bellies of large ones. They swim fast, and instead of walking, leap along.

In some Places they are much used for Food; tho' *Galen* so little regarded them, that he does not once mention them. Those bred in Ponds and Marshes are not so wholesome as those bred in Rivers, which abound with Phlegm, volatile Salt, and oily and balsamic Principles, which are proper for allaying sharp Humours of the Breast, are a little nourishing, and of an opening and dissolving Nature. From their Viscosity, however, they are hard of Digestion, and breed gross Humours; and some Authors assure us, that the two frequent Use of them makes People look sickly, and causes a Fever.

They agree at all Times with those who are of young and bilious Constitutions, have good Stomachs, and are accustomed to Exercise; but old and phlegmatic Persons ought to abstain from them, or use them moderately.

Their Spawn is much used in Physic, is cooling and moisten-

ing, and proper for qualifying sharp Humours: The Water distilled from it has the same Virtues. This Spawn is a viscous Matter, transparent, cold, glewy, and full of small Eggs. *Lemery of Foods*.

Emplastrum de Spermate Ranarum.

Plaster of Frog-Spawn.

Take of Frogs-Spawn, Oil of Frogs-Spawn, and Cerufs, reduced to a fine Powder, each two Pounds; of white Vitriol and crude Alum, each an Ounce and an half; boil all together to the Consistence of a Plaster: Then add of white Wax three Ounces; of Mastich and Frankincense, each half an Ounce; and of Camphire three Drams. Make into a Plaster.

The Frogs-Spawn must be newly gathered, and mixed in a Bason with the Oil of Frogs-Spawn, the Cerufs, the Vitriol, and the Alum reduced to Powder. This Mixture must be boiled by a moderate Fire, to the Consistence of a Plaster; then the white Wax must be melted in it; and when it is almost cold, incorporate with it the Mastich and Incense reduced to a fine Powder; and last of all add the Camphire, dissolved in about half an Ounce in the Oil of Frogs-Spawn. This Plaster is to be made up in Lumps for its better Preservation.

It is proper for Wounds, accompanied with Inflammation; it deterges, corrects the Acrimony of the Humours, and dries. It is used in Wounds of the Eyes.

The Vitriol and Alum are not ordinarily mixed with this Plaster, till about the End of the Boiling: But as only the Phlegm can be extracted from these Mineral Salts by such a Boiling, it is no matter whether they are put in soon or late. *Lemery Pharmacop.*

RANA VIRIDIS. Offic. Aldrov. de Quad. Ovip. 622. *Rana nostra viridis*, Ind. Med. 96. *Rana aquatica viridis*, Schw. Rept. 158. *Ranunculus viridis*, Schrod. 5. 305. Jonf. Quad. 133. *Ranunculus viridis, sive Dryopetes*, Gefn. de Quad. Ovip. 60. *Agredula*, Isidor. **THE TREE-FROG.**

The whole Frog, and its Blood, are used in Medicine. The Animal agrees in Virtues with the common Frog, and its Athes sprinkled on Wounds are said most effectually to restrain their Bleeding. The Blood is recommended as of peculiar Efficacy in a Philtre. *Dale from Schroder*.

RANCIDITAS. Rancidity; that sort of disagreeable Corruption which fat and oily Substances contract by Age and Heat.

RANCULA. An erratic Pain in a Wound, attended with Pain and Puffation. *Johannes Anglicus*.

RANDIA.

The Characters are;

It hath a Flower consisting of one Leaf, whose lower Part is tubulous, but the upper Part is expanded, and for the most part divided into five Segments. The Flower is succeeded by an oval Fruit, having but one Cell, which is filled with flat cartilaginous Seeds surrounded by a Pulp.

Miller mentions but one Species of this Plant.

Randia frutescens, spinis bijugis, foliis subrotundis, floribus albis. *Houft.* Shrubby *Randia*, with Spines growing two at a Joint, roundish Leaves and white Flowers. This Plant is figured and described by Sir *Hans Sloan* in his History of *Jamaica*, under the Title of *Lycium forte, foliis subrotundis integris, spinis & foliis ex adverso sitis.* Vol. I. p. 40.

This Shrub grows plentifully about *La Vera Cruz*, whence the Seeds were sent by the late Dr. *William Houston*, who gave this Name to it in Honour of Mr. *Isaac Rand*, a curious Botanist.

This Shrub rises to the Height of ten or twelve Feet in the Country of its Growth, and divides into a great Number of Branches, which are always produced by Pairs opposite, as are also the Leaves and Spines. The Flowers are small, and of a white Colour, which are succeeded by hard oval-shaped Fruit, about the Size of a large *Spanish* Nut, which is full of flat Seeds, inclosed in a soft blackish Pulp. The Leaves continue green throughout the Year. *Miller's Dictionary*.

RANGIFER. Offic. Jonf. de Quad. 64. Charlt. Exer. 12. *Cervus Rangifer*, Raii Synop. A. 88. *Tarandus*, Aldrov. de Quad. Bisul. 859. *Tarandus, sive Rangifer*, Gefn. de Quad. 840. *Tarandus*, Agric. Eliot. **THE RAIN-DEER.**

It is an Inhabitant of *Lapland*, and its Horns and Hoofs are of use in spasmodic Affections.

RANINÆ VENÆ. The large Veins under the Tongue.

RANULA. A Disorder of the Tongue, or rather a Tumour under the Tongue. See **LINGUA**.

RANUNCULO AFFINIS. A Name for the *Hydrocotyle, Zeylanica, Asari folio*.

RANUNCULOIDES. A Name for the *Hepatica; trifolia; caerulea flore*.

RANUNCULUS.

The Characters are ;

The Perianthium is generally pentaphyllous, sometimes hexaphyllous, and commonly caducous. The Flower is rosaceous, generally pentapetalous, or hexapetalous, and furnished with numerous Stamina. The Fruit is round or oblong, and contained in Capsules, each of which is furnished with an incurvated Tube, which varies according to the Species. The Plant, in other Respects, resembles the *Chelidonium Minus*.

Boerhaave mentions sixty-nine Species of *Ranunculus*, none of which have any particular medicinal Virtues ascribed to them at present, that I know of, except the 1st, 2d, 3d, 6th, 11th, 13th, 16th, 61st, 62d, 63d, and 68th.

1. *Ranunculus pratensis*; erectus; acris. *C. B. P.* 178. *Raii Hist.* 1. 583. *Synop.* 3. 248. *Boerb. Ind. A.* 30. *Tourn. Inst.* 289. *Ranunculus acris*, *Offic.* *Ranunculus rectus non repens, flore simplici luteo*, *J. B.* 3. 416. *Ranunculus pratensis, erectus, acris, vulgaris*, *Park. Theat.* 329. *Ranunculus furcatus cauliculis*, *Ger.* 804. *Emac.* 951. UPRIGHT MEADOW CROWFOOT.

It grows in Meadows and Pastures, and the Herb is used. This Species of *Ranunculus* is of a caustic Quality, and if the recent Herb bruised be applied to the Skin, it excites a Pain and Inflammation. The Roots are in Request among the Rustic Sort of People, and Soldiers, for the Cure of inter-mittent Fevers.

2. *Ranunculus*; *pratensis*; *erectus*; *acris*; in folii medio maculatus. *C. B. P.*

3. *Ranunculus*; *pratensis*; *erectus*; *dulcis*. *C. B. P. M. H.* 2. 439.

6. *Ranunculus*; *pratensis*; *repens*; *hirsutus*. *C. B. P.* 179. *Tourn. Inst.* 289. *Boerb. Ind. A.* 31. *Ranunculus*, *Offic.* *Ranunculus pratensis, repens*, *Park. Theat.* 329. *Raii Hist.* 1. 581. *Synop.* 3. 247. *Ranunculus pratensis etiamque hirsutus*, *Ger.* 804. *Emac.* 951. *Ranunculus repens flore luteo simplici*, *J. B.* 3. 419. CROWFOOT.

This has a small creeping fibrous Root, from which arise several hairy Leaves, cut into three Segments, each of which is divided into as many more, and are frequently spotted with white Spots on their upper Side. The Stalks grow not so upright as those of the *Ranunculus Pratensis*, *radice verticilli modo rotunda*, having longer and narrower Leaves, and not so divided; bearing on their Tops, round, five-leav'd, shining, yellow Flowers, with several yellow Stamina in the Middle. When the Flowers are fallen, the Head enlarges into a round Cluster of sharp-corner'd flattish Seed. This Species sends out Flagellæ from the Roots, by which it propagates itself. It grows frequently in moist Meadows, and by River-sides, and flowers in May. *Miller's Bot. Off.*

This Species is quite harmless, and is often boiled with other Greens in the Month of April. *Dale.*

11. *Ranunculus*; *montanus*; *aconiti folio*; *albus*; *flore minore*. *C. B. P.* 182. *Aconitum Ranunculoides, flore albo simplici*. *M. H.* 2. 450.

13. *Ranunculus*; *pratensis*; *radice verticilli modo rotunda*. *C. B. P.* 179. *Tourn. Inst.* 289. *Boerb. Ind. A.* 31. *Ranunculus bulbosus*, *Offic.* *Ger.* 806. *Emac.* 953. *Park. Theat.* 329. *Raii Hist.* 1. 581. *Synop.* 3. 247. *Ranunculus tuberosus major*, *J. B.* 3. 417. BULBOS CROWFOOT.

This is the most common, and with this our Fields about Town are covered in the Spring. It may be known from the rest by its round white tuberos Root, having several fibres at the Bottom. Its Leaves grow on longer Foot-Stalks; but it is cut into three Sections, like the *Ranunculus pratensis, repens, hirsutus*. It grows more erect, and the Calyx of the Flower turns back, and remains till the Leaves drop; whereas, in the creeping Sort, the Calyces fall off as soon as the Flowers are opened. It flowers in May, and is too frequent in our Fields and Meadows, being by the Vulgar called *Butter-Flowers*; they believing that the Butter receives its yellow Colour from these Flowers; whereas the Cows will meddle with none of the Crow-feet when green, by reason of their hot caustic Taste. *Miller's Bot. Off.*

The Root of this Plant is so acid, that it may be used for Caustics and Blisters, but principally upon the Joints of those Parts which are infested with the Gout. They bruise this *Ranunculo*, and apply it to the Corns of the Feet, after they have been well softened in warm Water, and cut to the Quick. *Martyn's Tournefort.*

The Root is of admirable Efficacy in eroding, consuming, and drying hard Tumours; but loses its Virtue when dried.

16. *Ranunculus*; *palustris*; *Aprii folio*; *lævis*. *C. B. P.* 180. *Boerb. Ind. A.* 31. *Tourn. Inst.* 291. *Ranunculus palustris*, *Offic.* *Ger.* 814. *Raii Synop.* 3. 249. *Ranunculus palustris rotundi folius*, *Ger.* *Emac.* 962. *Raii Hist.* 1. 585. *Ranunculus palustris sive minima*. *J. B.* 3. 858. *Ranunculus*

palustris Sardonius, lævis. *Park. Theat.* 1215. ROUND-LEAV'D WATER CROWFOOT.

It delights in watery Places, and flowers in June and July.

This *Ranunculus*, *Dale* supposes the fourth Species of *Dioscorides*, who writes that the Leaves and tender Stalks being applied as a Cataplasm, are exulcerating and escharotic, not without Pain. Hence they cure scabrous Nails, remove the Piora, and obliterate the Marks of such as are stigmatized. The Application hereof cures also the Myrmeciae, Acrochoridones, and Alopecia, and that in a short time. A Decoction of the same is good to soment Chilblains. The Root dried and triturated, excites Sneezing, when applied to the Nostrils, and worn as an Amulet, eases the Tooth-ach, but it breaks the Teeth. *Dioscorides, Lib. II. Cap.* 206.

61. *Ranunculus*; *gramineo folio*; *flore caudato*, *feminibus in capitulum spicatum congestis*. See MYOSUROS.

62. *Ranunculus*; *longifolius*; *palustris major*. *C. B. P.* 180. *Boerb. Ind. A.* 34. *Tourn. Inst.* 292. *Ranunculus flammæus*, *Offic.* *Ranunculus flammæus major*, *Ger.* 814. *Emac.* 961. *Raii Hist.* 1. 587. *Synop.* 3. 250. *Ranunculus palustris flammæus major*, *Park. Theat.* 1215. *Ranunculus folio longo maximus, Lingua Plinii*. *J. B.* 3. 365. GREAT SPEAR-WORT.

It grows in marshy Ditches, and flowers in June; its Virtues are the same with those of the *Ranunculus palustris*.

63. *Ranunculus*; *longifolius*; *palustris*; *minor*. *C. B. P.* 180. *Tourn. Inst.* 292. *Boerb. Ind. A.* 34. *Flammula*, *Offic.* *Ranunculus flammæus minor*, *Ger.* 814. *Emac.* 961. *Raii Hist.* 1. 587. *Synop.* 3. 250. *Ranunculus palustris flammæus minor sive angustifolius*, *Park. Theat.* 1214. *Ranunculus longifolius aliis flammula*, *J. B.* 3. 864. SPEAR-WORT.

It is found frequently growing in watery Meadows, and oozy Places, and flowers in June. The Herb, which is of Use in Medicine, agrees with the other Species in its caustic Quality. Its Leaves are sometimes even or entire, and sometimes serrated; in which latter Respects, it is called *Ranunculus flammæus serratus* by Gerard and Parkinson, and *Palustris serratus* by C. Baubine.

68. *Ranunculus*; *foliis Cyclaminis*; *radice Asphodeli*; *major*. *Tourn. Inst.* 285. *Boerb. Ind. A.* 35. *Thora*, *Offic.* *Thora Valdensis*, *Ger.* *Emac.* 966. *Raii Hist.* 1. 591. *Thora foliis Cyclaminis*, *J. B.* 3. 650. *Aconitum Pardalianches alterum, seu Thora minor*, *C. B. P.* 184. *Aconitum Pardalianches, seu Thora minor*. *Park. Theat.* 317. *Thora montis Baldi, sive Sabaudica*, *Ger.* *Aconitum Pardalianches primum, seu Thora major*, *C. B. Pardalianches, seu Thora major*, *Park.* LEOPARD-BANE.

It grows on the Mountains of Switzerland, and the Herb is endowed with a caustic Quality.

The Virtues of this Plant are either of the laudable and salutary, or of the hurtful and pernicious Kind. The first, second, sixth, thirteenth, and sixteenth Species are principally kept in the Shops. Its Roots and small Bulbs, bruised and applied to the Skin, excite Pain, Redness, Inflammation, a Gangrene, and an acrimonious State of the Humours: For this Reason they are of an escharotic, caustic Quality, and cure Diseases in which the nervous System is to be roused and shaken; such as Pains of the Bones, Epilepsies, Convulsions, Spasms, hysteric Passions, fixed Pains of the Periosteum, Gouts, old Ulcers, and ischiadic Pains. They exulcerate and burn into Crust the Skin and Panniculus adiposus; and if they are left in open Wounds, they excite Fistulas. It is also customary among Soldiers and common People, to gather, wash, and bruise the Roots of the first, second, and third Species, and apply them to the Soles of the Feet, or between the Fingers, by which Means they successfully cure intermitting Fevers; but if they are too acid, they burn the Skin.

This Herb is, by many, called *Scelerata Herba*, because with its Roots and Bulbs the Beggars raise unseemly Ulcers on their Children, in order to excite the greater Compassion. The Herb put up the Nostrils excites a violent Sneezing. Warts are eradicated by rubbing them with this Plant; and the Ancients applied the Leaves of the *Ranunculus* for the Cure of a Leprosy. This Plant is poisonous when used internally, but externally it cures the Itch in Children.

It is by some called *Apium Rific*; hence *Giulandinus*, that skilful Botanist, thought that it was the *Apiastrum* of Pliny, which *Dioscorides* calls *Sardonia*. This is so acrimonious, that if it is applied to the Tongue, it immediately inflames it, and produces a Gangrene in it.

It is also called *Herba Strumea*, because it resolves and dissolves scrophulous and stumorous Swellings; *Pet. Corvinus*, because the Leaves of some Species of it resemble Crows Feet; and *Ranunculus*, from *Rana*, because it grows in moist Places. *Hist. Plant. Africæ, lib. 6.*

Behold the foregoing Species of *Ranunculus*, *Dale* mentions the following:

Ranunculus montanus, Offic. *Ranunculus montanus maximus albus*, Park. Theat. 334. *Ranunculus montanus Aconiti folio albus flore majore*, C. B. P. 182. Tourn. Inst. 290. *Ranunculus Aconiti folio*, Ger. Emac. 954. *Ranunculus flore albo Alpinus major*, J. B. 3. 861. Raii Hist. 1. 589. MOUNTAIN CROWFOOT WITH A WHITE FLOWER.

It grows on woody Hills, and flowers in May and June; and agrees in Virtues with the other Species of *Ranunculus*.

RAPA.

The Characters are;

The Pod ends in a fungous kind of Horn, and the Root is carnosous and tuberous.

Boerhaave mentions nine Species of *Rapa*, which are;

1. *Rapa*; fativa; rotunda; radice candida. C. B. P. 89. Raii Hist. 1. 800. Synop. 3. 294. Tourn. Inst. 228. *Boerb. Ind. A. 2. 12. Rapa*, Offic. *Rapum hortense*, Park. Parad. 508. *Rapum majus*, Ger. 177. Emac. 232. *Rapum sativum rotundum*, J. B. 2. 838. TURNEPS.

This is a Root so well known, that it would be needless to say more than that it is round, and somewhat flat, of a white Colour, but somewhat reddish on the Outside. The Leaves are large, rough, and very much cut in, being round and broad at the End, and lying on the Ground. In the Spring it sends forth branched Stalks, clothed with smaller, but smooth and undivided Leaves, and long Spikes of four-leaved bright yellow Flowers; which are succeeded by long, slender Pods, containing round black Seed. It is sown in the Fields and Gardens, and flowers in April.

Turneps are much eaten with all Sorts of Flesh, in the Winter Season especially, and are a wholesome and nourishing Root, tho' somewhat windy; and are more used in the Kitchen than in the Apothecaries Shops. Some commend a Syrup made with Slices of Turneps and brown Sugar-candy, Stratum super Stratum, baked in an Oven, as a good Pectoral, and helpful for Coughs and Consumptions. *Miller's Bot. Off.*

Turneps are sown in a moist Soil with Cabbage, and are much used for Food. They are of two Kinds, Male and Female, which differ little from one another; only the Male is usually round, about the Bigness of a Child's Head, and much extended in Breadth; the Female is oblong, and most esteemed. Such as are tender, plump, of a good Taste, and grow in a fat and moist Soil, are the best. They sometimes grow to a prodigious Bigness. *Pliny* and *Tragus* say, they had seen some of the Males that weighed forty Pounds; and *Amatus* reports that he had seen some that weighed above fifty and sixty Pounds. Some of the Females have been known to have weighed thirty.

They contain much Oil, and a little essential Salt; and are very nourishing, softening, and provoke Urine, having an oily balsamic Juice, proper to correct the sharp Salts of the Humours, and to recruit the solid Parts. The Decoction of them, strained and sweetened with Sugar, is used to allay the sharp Humours of the Breast, and remove Hoarseness, and must be taken just before going to Bed.

They are hard of Digestion, windy, and sometimes cause Obstructions; because their Substance being very compact and close, they continue a long Time in the Stomach before they are wasted, ferment there, and easily stop in the small Channels or Pipes through which they pass. They agree at all times with young bilious Persons, and those whose Humours are sharp and thin, provided, however, they have a good Stomach. The Seed is reckoned good against Poison, and to kill the Worms. *Lemery of Foods.*

2. *Rapa*; fativa; rotunda; radice obsoletè nigricante. C. B. P. 90.

3. *Rapa*; fativa; rotunda; radice supra Terram viridi.

4. *Rapa*; fativa; rotunda; radice foris & intus flavescente. C. B. P. 90.

5. *Rapa*; fativa; rotunda; radice foris & intus pallide lutescente.

6. *Rapa*; radice compressa, candida.

7. *Rapa*; radice oblonga; seu femina. C. B. P. 90.

8. *Rapa*; radice oblonga; seu femina; radice obsoletè nigra.

9. *Rapa*; radice oblonga; seu femina; major. *Boerb. Ind. Alt. Plant.*

This Plant agrees in Virtues with the *Raphanus*; the Cortex, or Bark, of the Root has an acrimonious Taste; but the Juice of the interior medullary Substance has a Honey-like Savour. The Root boiled and decorticated is an excellent Antiscorbutic, and is thought to have a demulcent Virtue. The expressed Juice of the Root, taken in a good State of Maturity, and before it bears Seed, being boiled and clarified, with an Addition of Honey, making a third Part of the whole, is an incomparable Medicine for Ulcers in the Mouth, and to deterge Aphthæ; and being drank, is an excellent Remedy for an inveterate Cough. The Seed, heated and pressed, yields

an Oil of Use on all Occasions. The Bulb roasted under the Embers, is an Anodyne in Inflammations of the Ears. The same boiled in Butter, and made into a Cataplasm, is very good to mollify Tumors. *Nicander* writes, that the *Rapa* is a very proper Ingredient in alexipharmic and theriacal Compositions; it serves also for Food and Sauce. *Galen* says, that it is a very good Aliment, but flatulent: It loses, however, its Flatulency in boiling or roasting; but as it is always deprived of its Cortex, it must still retain some Flatulency. The following Remarks on *Rapa* are worth Observation: The lesser the Bulb, and the more sandy the Soil in which it grows, the more acrimonious is its Taste; the Rind of the Bulb is always bitter, which is a Proof that the Plant is antiscorbutic. The Juice is highly commended by modern Physicians. They press the whole Body of the Bulb into a Flour, and so express the Juice, which is acrimonious; then with an Addition of Honey they make of it a Gargarism, which is a good Remedy in the Quinsey, and a Peripneumony. The eighth Species becomes the more acrimonious for being pierced by Worms, because the aqueous Juice is evacuated by the Wounds. That there is a considerable Flatulency in crude Turneps, is demonstrated by Mr. *Boyle*, who found, that by putting them with their Rinds pared off in an exhausted Receiver, and suffering them to continue therein for four and twenty Hours, they had in that Space of Time generated five Atmospheres; that is, rendered the Air within the Receiver of five Times the Weight of that without it. The same Experiment will hold good of Radishes; whence it appears, that there is in these Plants an antiscorbutic and very deterfive Quality. Hist. Plant. Ascript. *Boerhaave*.

Besides the foregoing Species of *Rapa*, *Dale* mentions the following:

Rapa Sylvestris, Offic. C. B. P. 90. Raii Hist. 1. 800. *Rapum Sylvestre*, Ger. 179. Emac. 233. *Rapum sylvestre non bulbosum*, Park. Theat. 861. *Rapum sylvestre Matthioli*, J. B. 2. 841. WILD TURNEP.

It grows in Fields, and flowers in the Summer. The Root, as *Dioscorides* says, is an Ingredient in *Smegmata*, or deterfive Medicines, composed of the Flour of Lupines, Wheat, Darnel, or Vetches, for clearing the Skin of the Face, and of the Body. *Dioscorides*, L. 2. C. 135.

RAPAX. A Name for Amber.

RAPHANINUM OLEUM. Oil drawn from the Seeds of the Radish. *Dioscorides* recommends it for cutaneous Disorders. L. 1. C. 45.

RAPHANISTRUM.

The Characters are;

The Pod is full of Joints, like a fasciated or filleted Column, and full of roundish Seeds, inclosed in each Joint.

Boerhaave mentions three Species of *Raphanistrum*, which are;

1. *Raphanistrum*; segetum; flore luteo, vel pallido. T. 230. *Bapistrum*, flore luteo, siliqua glabra articulata. Raii Hist. 805.

2. *Raphanistrum*; arvense; flore albo. T. 230. *Rapistrum*, flore albo *Erucæ foliis*. Lob. Ic. 199. *Lampisana*. Cæsalp. 355.

3. *Raphanistrum*; flore albo striato; siliqua articulata, striatâ, minore. See ARMORACIA. *Boerb. Ind. Alt. Plant.* It is called *Raphanistrum* from *Raphanus*, because its Root resembles that of the *Raphanus minor*. Its Virtues are the same with those of the *Raphanus*. Hist. Plant. Ascript. *Boerhaave*.

Raphanistrum is also a Name for several Sorts of *Rapistrum*, which see.

Raphanistrum dispernum. A Name for the *Erucago*; segetum.

Raphanistrum monospermum. A Name for the *Myagrum monospermum*; latifolium.

RAPHANUS.

The Characters are;

The Pod is like a Horn, thick, spongy, divided by a thin Membrane into two Capsules, or Cells, containing round Seeds.

Boerhaave mentions five Species of *Raphanus*, which are;

1. *Raphanus*; major; orbicularis; vel rotundus. C. B. P. 96.

2. *Raphanus*; major; orbicularis; floribus candidis. C. B. P. 96.

3. *Raphanus*; niger; major; rotundus. M. H. 3. 265.

4. *Raphanus*; minor; oblongus. C. B. P. 96. Tourn. Inst. 229. *Boerb. Ind. A. 2. 11. Raphanus hortensis*, Radicula, Offic. *Raphanus*, J. B. 2. 846. *Raphanus sativus*, Ger. 183. Emac. 287. Raii Hist. 804. Synop. 3. 296. *Raphanus vulgaris*, Park. Theat. 861. Parad. 507. RADISH.

This Root is very well known to every one, to be long, single, and white; and covered with a thin reddish Skin on the

the upper Part; the Leaves are large, rough and hairy, pretty much cut in on the Edges; the Stalks grow to three or four Foot high, much branched, having several four-leaved white Flowers, with a reddish Spot on each Leaf; which are succeeded by pretty large, light, spongy Seed-vessels, including oval, reddish, brown Seed, as big again as Rape Seed. It is planted in Gardens, and flowers in May.

Radishes are opening, attenuating, and antiscorbutic, and are much eaten in the Spring; but afford little Nourishment, and are very windy. They provoke Urine, and are good for the Stone and Gravel. They are but seldom used in the Shops. *Miller's Bot. Off.*

The Parts useful in Medicine are the Root and Seed, which are principally employed in wasting and expelling the Stone; in provoking Urine and the Menfes; and in opening Obstructions of the Liver and Spleen. *Dale.*

The *Raphanus* has the Virtues of the *Cochlearia*; the Root is esculent, expels Phlegm from the Intestines, and is a Carminative. The Flowers, Leaves, Seeds and Roots are antiscorbutic; for which Reason they are much in request, and are proper for phlegmatic Constitutions. The expressed Juice of the Roots and Seeds, taken in the Morning with Honey, is a very wholesome Medicine, especially if a Draught of Whey be taken afterwards; for it cleanses the Stomach, Kidneys, and Lungs, and is good against an inveterate Cough and Hoarseness, proceeding from Phlegm; but it is not proper in a Cough proceeding from an Inflammation, nor for those who spit Blood. The Leaves are used among other Greens. The Root contains much of an aqueous and acrimonious Substance; and the drier it is, the more acrid it becomes; but its Acrimony is lost in boiling. Its Aquosity renders it flatulent, on which Account it is said not to be good in hypochondriacal Disorders: The daily Use of the Root, however, is of sufficient Efficacy to cure a great Dropsy in the Beginning; and it is of excellent Service in the Scurvy. It is also aperitive, inciding, and good for the Stone, the nephritic Colic, a Retention of Urine and the Menfes, and in the Jaundice. The Seeds are opening; but taken inwardly by themselves, they excite a Nausea. *Hist. Plant. Ascript. Boerhaave.*

5. *Raphanus*; major; oblongus. *Boerb. Ind. Alt. Plant. Raphanus aquaticus.* A Name for the *Sisymbrium*; *aquaticum*; *Raphani folio*; *siliqua brevior*; and for the *Sisymbrium*; *aquaticum*; *foliis in profundas lacinias divisis*; *siliqua breviori*.

Raphanus rusticus. A Name for the *Cochlearia*; *folio cubitali*.

RAPHE. A Suture.

RAPISTRUM.

The Characters are;

The Shell is almost globular, and consists of one Capsule, which generally contains no more than one Seed.

Boerhaave mentions six Species of *Rapistrum*, which are;

1. *Rapistrum*; Orientale; *Acanthi folio*. *T. Cor.* 14.
2. *Rapistrum*; monospermum. *T.* 210. *C. B. P.* 45. *Prodr.* 37. *J. B.* 845. *Raphanistrum*, monospermum, capsulis striatis, tenuibus, oblongiusculis. *M. H.* 2. 267.
3. *Rapistrum*; maximum; rotundifolium; monospermum. *Corn.* 147. *Raphanistrum* monospermum, maximum, rotundifolium; capsula rotunda, glabra. *M. H.* 2. 265.
4. *Rapistrum*; arvense; folio auriculato, acuto. *T.* 211. *Myagro similis*, siliqua rotunda. *C. B. P.* 109. *Prodr.* 52. *Raphanistrum*, siliqua minore, rotunda, rugosa, aspera. *M. H.* 2. 267.
5. *Rapistrum*; Orientale; folio *Raphani*; capsulis rugosis. *Nissole.*
6. *Rapistrum*; Orientale; *Dentis Leonis folio*; flore albo. *T. Cor.* 14. *Boerb. Ind. Alt. Plant.*

It is called *Rapistrum* from *Rapa*, because its Leaves resemble those of the *Rapa*. All the Species are antiscorbutic, and have an acrimonious Taste, mix'd with a Savour of Garlic, whence they contain something of a heating Quality; however, they are not much commended, and are but of little Use in Medicine. *Hist. Plant. Ascript. Boerb.*

Rapistrum, is also a Name for the *Sinapi*; *arvense*; *præcox*; *semine nigro*. And for the *Sinapi*; *arvense*; *præcox*; *semine nigro*; *foliis integris*.

Rapistrum flore albo. A Name for the *Raphanistrum*; *arvense*; *flore albo*.

Rapistrum flore luteo. A Name for the *Raphanistrum*; *segetum*; *flore luteo*, vel pallido.

Rapistrum Italicum. A Name for the *Erysimum*; *angustifolium*; *majus*.

RAPUM. See RAPA.

RAPUNCULUS.

The Characters are;

It has all the Appearance of the *Campanula*, except in that the Flower is monopetalous, quinquefid, stellated, and furnished with a corniculated Pistil.

Boerhaave mentions two Species of *Rapunculus*; the first of which has its Flowers collected into a Head, and is known by the Name,

Rapunculus; *Scabiosæ capitulo*. *C. B. P.* 92. *Scabiosa, globularis, quam ovina vocant*. *J. B.* 3. 25. 12. *Rapuntium montanum, capitatum, leptophyllum*. *Col.* 1. 227.

The second Species, which is distinguished by having its Flowers disposed in the Figure of an Umbella, is called,

Rapunculus; *valerianoides*; *cæruleus*; *umbellatus*. *Flor.* 2. 113. *Cervicaria, valerianoides, cærulea*. *C. B. P.* 95. *Trachelium, umbelliferum, cæruleum*. *Ponæ. Valerianthemum*. *Hoffman. Delic. Boerb. Ind. Alt. Plant.*

It is called *Rapunculus*, because its Root resembles that of the *Rapum*. But I find no Virtues ascribed to it.

Rapunculus is also a Name for several Sorts of *CAMPANULA*.

RAPUNTIIUM.

The Characters are;

In Leaves, Fruit, and outward Appearance, it resembles the *Campanula*. The Flower is monopetalous, divided into Parts, shaped like a Tongue, and inclosed in a Sheath.

Boerhaave mentions four Species of *Rapuntium*, which are;

1. *Rapuntium*; maximum; coccineo; spicato flore. *Col. in Rech.*
2. *Rapuntium*; Americanum; flore dilute cæruleo. *A. R. P.* 105. *Rapunculus, Galeatus, Virginianus, flore violaceo, majore*. *M. H.* 2. 466.
3. *Rapuntium*; Americanum; *Virgæ aureæ foliis*; parvo flore cæruleo. *T.* 163.
4. *Rapuntium*; Africanum; minus; angustifolium; flore violaceo. *T.* 163. *Campanula, minor, Africana, erini facie, flore violaceo, cauliculis procumbentibus*. *H. L. Boerb. Ind. Alt. Plant.*

This Plant is not received in Medicine. The first Species serves to feed Sheep, and bears a very beautiful Flower, which, for Colour and Lustre, surpasses all others; for which reason it is called *Flos cardinalis*, the Cardinal Flower. *Hist. Plant. ascript. Boerhaave.*

RAREFACIENTIA. Medicines which rarify the Blood.

RASA. The same as RESINA.

RASA, or RASTIS. Tin.

RASAKETI, RUSATAGI, or RUSANGI. Burnt Copper. *Rulandus.*

RASCATIO. Excreation, or Hawking.

RASCETA, or RASETTA. The Wrist; or Ankle. The Word is Arabick.

RASILIS ÆRUGO. See ÆRUGO.

RASORIUM. A Raspatory, or Lenticular. See Table 28. Fig. 3, 4, and 5.

RASPATORIUM. The same as RASORIUM.

RASTETA. The same as RASCETA. *Paracelsus.*

RASTOL, or RASOES. Copper. *Rulandus.*

RASTUL. Salt. *Rulandus.*

RASURA. A Shaving, or Rasping. It is also used to express a kind of Corrosion by acrid Humours. *Rasura*, are Shavings, or Rasplings.

RATIONIS OS. The OS SINCIPITIS. *Blancard.*

RATIS. *Marcellus Empiricus* informs us, that this is the French Name for the *Filicula*, (Polypody) which frequently grows on the Beech.

RAUCEDO. Hoarseness.

RAVED. Rhubarb.

RAXACH. Gum Ammoniac.

REALGAR. *Realgar*, or *Lifagallum*, of the Shops; *Σανδαράχη* of the Greeks; *Realgar*, *Lefegal*, and *Zarnich Abmen*, of the Arabians; called by us Red Orpiment; is an arsenical Juice of the same Nature with Orpiment, differing from it only in Colour. It is of two Kinds, native and factitious: The native *Realgar* is dug out of the same Mines with Orpiment, resembling Cinnabar in Colour, and smelling like Sulphur and Garlic when burnt, and made up in solid brittle Glebes. The factitious Kind is made of Orpiment, melted and boiled for some time in subliming Vessels, by which the yellow Flowers are raised to the upper Part of the Vessels, and the Mass remaining at the Bottom, being condensed by Cold, becomes of a red Colour, like Cinnabar, and is called *Realgar*; which, if it be exposed to the free Air for a long Time, becomes covered with a saline Efflorescence. This *Realgar* is not to be confounded with the factitious red Arsenic.

Realgar is brought from *China*, in different Figures; some of which resemble the Figures of little Men, called Pagods; and I am of opinion that it is not cut into these Figures, but cast in Moulds.

Realgar is no less poisonous than Orpiment. According to *Dioscorides*, *Sandaracha* has a septic and corroding Virtue; but it is wonderful that he should recommend the Use of it, not only in Fumigations for Coughs of long standing, but

also taken inwardly, mixed with Resin for Asthmas; with Honey for a Hoarseness, or a spitting up of a purulent Matter. Even *Hippocrates*, in a Suffocation of the Uterus, accompanied with a Cough, orders the Weight of an Obolus, or about twelve Grains of Sandarach, mixed with the same Quantity of unprepared Sulphur, and three or four blanch'd Almonds, to be taken in sweet or perfumed Wine. The *Indians* commonly drink Wine or Water out of arsenical Cups, for various Diseases, as a sovereign Remedy; though among us, this Practice has been found to be attended with very bad Consequences. It must be owned, therefore, that the Bodies of Men in hot Countries are different from ours. As insensible Perspiration is there more copious, their solid Fibres are drier, and more unfit for Motion; and, for that reason, require more strongly irritating and stimulating Medicines, to make these Fibres contract as they ought. Likewise, as the Fluids in their Bodies are thicker and more viscid than in ours, by the Evaporation of the more fluid Parts of them, they cannot be attenuated but by strong and very acid Medicines; and therefore what is a certain Poison to us, is to them an efficacious Remedy; as the cathartic Medicines which we use, have hardly any Effect on them, except they be given in three times the common Quantity, as has been often observed by Physicians. In our Climate, therefore, we ought to abstain from the inward Use of these Medicines, however prepared, corrected or mitigated; because they still retain some Part of their deleterious Qualities, and prove fatal to Persons whose Viscera are tender. Neither is the external Use of them altogether safe; for *Fernelius* relates, that by applying a large Quantity of Arsenic to a cancer'd Breast, the Patient was carried off in six Days. About three Hours after the Medicine was applied, she was seized with a Shivering, Vomiting, Pain in her Head, and frequent Fainting. Her Pulse was weak, and as the Symptoms increased by Degrees, she began to be cold in the Extremities of her Body, and then her Face and other Parts swelling beyond Measure, she soon died. From this Observation, *Fernelius* takes occasion to caution Physicians against the external Use of arsenical Medicines, except in small Quantities, and to Parts at a great Distance from the Heart and Brain; though, in the Opinion of many very great Physicians, they are thought to be very powerful and efficacious Remedies in cachectic, phagedænic, and carcinomatous Ulcers.

The Correction of *Realgar*, first proposed by *Helmont*, and afterwards published by *Dallicot*, first Physician to the Duke of *Lorraine*, which has been found successful in many Cases, is this:

Put any Quantity of *Realgar*, finely powdered, into a Glass Matrafs, and pour upon it as much of a strong Lixivium of Tartar and Nitre, as will swim four Fingers Breadth above the *Realgar*. Digest them in a Sand-heat for twenty-four Hours, shaking the Matrafs very often. Then pouring off, and preserving the Tincture, pour new Lixivium upon the Powder, and repeat the whole Operation, till almost all the *Realgar* is dissolved, some indissoluble metallic Parts only remaining. Afterwards mix all the Tinctures together, pass them through Cap-Paper, and pour, at several times, as much Vinegar of Lead to the strained Liquor, as will precipitate all that can be separated from it. Then pouring off the clear Liquor from the precipitate by Inclination, let the Powder be washed with warm Water till it become almost insipid; and when it is well dried, burn a sufficient Quantity of rectified Spirit of Wine upon it; and then calcine it with the Tincture of Opium extracted with Spirit of Wine. This Powder, so prepared, is a gentle Eucharotic, of great Service in cancerous Swellings. *Croffroy*.

REBIS. A Word in *Paracelsus*, importing the Excrements of the Belly. It is also a Name for his celebrated Medicine, called *Azoth*.

REBISOLA. A secret Medicine prepared of Urine, for the Jaundice. *Rulandus*.

REBOLEA. Mummy. *Rulandus*.

REBONA. Burnt Dung. Mummy. *Rulandus*.

REBUS. The ultimate Matter of all Things.

RECEPTACULUM. A Receptacle. In Chymistry, a Receiver. In Anatomy, the *Receptaculum Chyli*, or Receptacle of the Chyle, is the Part to which the Lacteals convey the Chyle, in order to be transmitted to the Blood.

RECEPTARIII MEDICI. Physicians who collect or write vast Loads of Prescriptions, to the great Detriment of their Patients, are thus called by way of Reproach.

RECEPTUM. A barbarous Word, importing a Prescription.

RECESSUS. This Word is sometimes used to express an Abscess, or Apostemation.

RECHA. Marble. *Rulandus*.

RECIDIVA. A Relapse. After a Disease is once cured, the Patient often suffers a Relapse; a Disposition to which may

be known by the following Signs: If, after the Disease has left the Patient, a Weakness still remains; if there be no Appetite, nor Digestion, but much Nauseating, accompanied with nidorous or acid Eructations: With equal Certainty is a Relapse portended, if the forementioned Indications be attended with a fetid Breath, a vehement Thirst, and much Watching; if the Præcordia, and Parts adjacent, are tumified; and if the Face be inflated, especially towards the upper Eye-lid. All these forementioned Symptoms indicate a Return of the Disorder with the greater Certainty, in proportion as they appear more evidently at those Times, in which there is usually an Exacerbation of the Disease.

The Kind, or Nature of the Distemper will also furnish something material for predicting a Relapse. Those Fevers which are attended with an Inflammation, are very subject to return upon the Patient; for though the Fever goes off, it leaves behind it something of a Heat and Æstuation in the Viscera. Of the same Disposition are the Epilepsy, Dimness, the Hernicrania, an obstinate Pain of the Head, a Catarrh, Asthma, Pains in the Kidneys, the Colic, Gout, and other Disorders of that Nature. The Season most favourable to Relapses is the Autumn; and every Relapse is the less dangerous for being occasioned only by bad Diet, and not from some corrupt Reliques of the former Disease. The sooner a Disorder returns, and the more impaired the Strength of the Patient, the worse is the Relapse; and whatever Disease ceases all on a sudden, and for no manifest Reason, seldom fails to return. *Lonnius, Med. Obs.*

RECIPE. A Word always used in the Beginning of Prescriptions, importing, Take. It is generally wrote R, or ʒ.

RECIPIENS. In Chymistry is a Receiver. In Pathology, *Recipiens* is the Recipient, or Subject which receives a Disease.

RECIPROCATIO. The same as ANTAPODOSIS.

RECLUSIO. The same as ANASTOMOSIS.

RECOCTA. A Sort of Cheese made of Whey or Butter-milk. *Castellus*.

RECOLATIO. A repeated Percolation, or Straining.

RECORDATIO. The same as ANAMNESIS.

RECORPORATIO. See METASYNCRISIS.

RECREATIO. The same as ANALEPSIS.

RECREMENTUM. A Recrement. It is much the same as Excrement; except that with respect to Metals, their *Scoriae* are called Recrements.

RECRUDESCENTIA. This is used by some Authors to express a Relapse.

RECTIFICATIO. Rectification; that is, a Depuration, or Exaltation of the Substances produced by Distillations, by repeating the Distillation a sufficient Number of Times.

RECTUM INTESTINUM. See COELIA.

RECTUS. This is a Name for several Muscles. Thus there is the *Rectus Abdominis*. See ABDOMEN. There are several Muscles which assist in moving the Head, that are called *Recti*.

RECTUS MAJOR.

This is a small, flat, short Muscle, broad at the upper Part, and narrow at the lower; and though it is called Rectus, it is situated obliquely between the Occiput and second Vertebra of the Neck.

It is fixed below to one Branch of the bifurcated Spine of the second Vertebra of the Neck, at a Tuberosity, which is often found at the upper Part of that Branch. Thence it ascends a little obliquely outward, and is inserted in the posterior Part of the inferior transverse Line of the Os Occipitis, at a small Distance from the Crista, being a little covered by the Obliquus superior.

RECTUS MINOR.

This Muscle is like the former, and it has also a small Insertion below, in the posterior Eminence of the first Vertebra. From thence it ascends laterally, and is inserted immediately under the posterior Part of the inferior transverse Line of the Os Occipitis, in a superficial Fossula, on one Side of the Crista Occipitalis.

The Recti majores and minores postici, and Obliqui Superiores, turn the Head a little Backward, on the first Vertebra of the Neck; and they can neither act otherwise nor separately; the Recti Majores contribute most to this Motion; and the Minores seem likewise to hinder the articular Membranes from being pinched between the Bones in great Motions.

RECTUS ANTICUS LONGUS.

This Muscle is in some Measure of a pyramidal Figure, lying along the anterior and lateral Parts of the Vertebrae of the Neck, all the Way up to the Basis Cranii.

It is fixed to the anterior Parts of the transverse Apophyses of the third, fourth, fifth and sixth Vertebrae in a digitated Manner. From thence it runs up obliquely inward towards the

R E D

the lateral Parts of the Bodies of the Vertebrae, passes on the Fore-side of the first and second, without being inserted in them; and approaching gradually towards the same Muscle on the other Side, it is inserted near it, in the Forepart of the lower Side of the Apophysis Basilaris, or great Apophysis of the Os Occipitis.

RECTUS ANTICUS BREVIS.

This is a small flat Muscle, about the Breadth of one Finger, situated laterally on the anterior Part of the Body of the first Vertebra. It is fixed below to the Basis or Root of the transverse Apophysis of that Vertebra, near the anterior Eminence.

From thence it runs obliquely upward and inward to a transverse Impression in the lower Side of the Apophysis Basilaris of the Occipital Bone, immediately before the Condyle on the same Side, being covered by the *Rectus Anticus Longus*.

The *Recti Majores* and *Minores Antici*, and the two *Transversales Antici* move the Head forward on the first Vertebra; and the *Recti Minores* and *Transversales Breves*, likewise defend the Capsular Ligaments. *Winslow's Anatomy*.

RECURSIO. The same as **PALINDROMIA**. Or the Return of a Paroxysm, or Fit.

RECUTITI. The same as **APELLÆ**.

REDIVIVUS. Reviv'd. This, in Chemistry, is frequently apply'd to Metals, which, after having been disguised, and concealed in a Form foreign to their respective Natures, are reviv'd, and restor'd to that which is natural to them.

REDUC, or REDUX. A Flux, or Powder, by which calcin'd Metals, or Minerals, are reduced to a Reguline Form. *Rulandus*.

METHODS OF PREPARING FLUXES.

We took four Ounces of red Lead, an Ounce of white Sand in Powder, and two Ounces of dry decrepitated Salt, and mixed them all well together in a Mortar; then putting the Mixture into a clean Hessian Crucible, fitted with a Cover, we fused the Matter in a Wind Furnace for a Quarter of an Hour; when taking it out, and letting it cool, we afterwards broke the Crucible, and found the Salt at Top, and a pure Glass of Lead at the Bottom. This Glass we carefully separated, and kept a-part as a powerful Flux.

The Salt is of no other Use in this Operation, than to serve as a Flux to the Sand, and make it more readily unite with the Red-Lead; so as to form a Glass without any great Violence of Fire, or the Necessity of being long detained therein. So that by this Means a Glass of Lead may be readily prepared for the Purpose of artificial Gems, or other Uses.

This Glass of Lead is a Flux extremely useful in the Business of Assaying; and when kept long in Fusion, passes thro' the Pores of any common Crucible, almost like Water thro' a Sieve; so as, upon the Test, readily to vitrify, or carry off all Sorts of Metalline and Mineral Matter, except Gold and Silver: On which Property, therefore, the Art of Cupelling depends.

Fluxes seem reducible to two general Kinds; the Vitreous and the Saline. By the Vitreous we understand all those which either have of themselves, or readily assume a glassy Form in the Fire; among the Principle whereof we reckon the Glass of Lead, the Glass of Antimony, and Borax.

By the Saline Kind of Fluxes, we understand all those that are composed of Salts, whether Tartar, Nitre, fixed Alkali, or the like. Among the principal of this Kind, we reckon the black Flux, Sandiver, Kelp and the like. The vitreous Kind seem more immediately destined to act upon the stony or vitrescible Matter, wherewith stubborn Ores are frequently mixed; and the Saline Kind, to act more immediately upon the Ore itself, for the due Exclusion or Separation of the Metal.

The more kindly Ores require no Flux to make them run thin, or to afford all the Metal they contain. And sometimes Ores are so kindly as to contain their own Fluxes within themselves. Thus we have met with Copper Ores, which being barely ground to Powder, and melted, without any Addition, in a common Wind-furnace, have yielded as much, or even more pure Metal at the first Operation, than we could obtain from them by Means of the usual Fluxes. Whence we see that artificial Fluxes are not always necessary; or that the principal Use of them is for the stubborn and less tractable Ores. These are sometimes so exceedingly hard to fuse, and reduce to a metalline Form, that it requires the utmost Power of Art to treat them advantageously in the larger Way of Business, where no considerable Expence can usually be allowed for Fluxes. On this Account it is, that many Mines remain unwrought, as being intractable, without great Charges. Whence the Improvement of the Business of Fluxes, so as to render them cheap and effectual, might greatly contribute to the Improvement of Metallurgy.

We would, therefore, recommend to farther Enquiry what Matter it is, in the more soft and tractable Ores, which renders them so fusible, and easy to part from their Metal. Certain

R E G

Experiments we have made with this View seem to shew, that in Copper Ores it is a Kind of bituminous Substance, capable of melting by a strong Heat into a soft black Kind of Glass.

Some of the most powerful and cheap simple Fluxes hitherto known, are dried Wine-Lees, dried Cow-dung and Horse-dung, dried River-mud, Fuller's Earth, Iron Filings, common Salt Glass, Kelp, or Pot-ash, Sandiver and the like, which may be used in the larger Works; as Nitre, Tartar, Borax, Sal-ammoniac, Mercury-sublimate, and the like, may in the smaller, or for the making of Assays.

As for compound Fluxes, they are numerous, almost every Operator having his favourite Flux. And certainly some Fluxes are better adapted than others to certain Ores. But perhaps a few general Ones might be fixed upon, which should serve instead of all those hitherto commonly known and used. We will here recommend three, which are powerful, almost general, and not expensive.

1. Take of Nitre, prepared by long boiling it in Lime-Water, of Sea Salt, melted in the Fire, Sandiver and dry Wine-Lees, each one Part; Glass of Lead three Parts; and powder'd Glass, eight Parts; mix them all well together. This Flux added in an equal Weight, will fuse a very stubborn Ore.

2. For a still stronger, Take equal Parts of white Tartar, common Salt and Nitre, prepared as above; calcine them to a white Powder, and mix therewith its own Weight of Glass of Lead; and of this Flux add two Parts to one of the stubbornest Ore.

3. For a powerful Saline Flux, Take of the strongest Soap-boilers Lees four Pounds, white Tartar and common Salt, melted in the Fire, each one Pound; boil them together with five Gallons of human Urine, to a dry Salt. This Flux is particularly proper where Sulphur and Cobalt abound, and render the Ore very refractory.

But the great Secret in making and adapting of Fluxes, is not only to separate the Metal already ripened in the Ore, but even to mature and ripen the crude immature Part of the Ore in the Fire. Something of this Kind we apprehend may be effected; as having Reason to believe, that certain Fluxes will obtain a larger Yield of Metal from certain Ores, than other Fluxes in common Use, though esteemed of the best, and though they are perhaps of the dearest Kind. Thus clean Iron Filings will often do more than Borax. But as the Scales and Crocus, or Rust of Iron, have been commonly used, instead of pure and perfect Iron itself, for a Flux, few Operators appear acquainted with the Excellence of perfect Iron, employed for this Purpose: And many Advantages are now commonly reaped by a prudent mixing of one Ore with another of the same Denomination, and with the Slags or Recrements of Metals, in the Way of a Flux. *Shaw's Chemical Lectures*.

REDUCTIO, Reduction, in Chymistry, or Resuscitation; is the Restoration of a Metal, previously disguised under the Form of a Calx, or Powder, or dissolved in a Fluid, to the Form of a Metal.

REDUPLICATION. The same as **ANADIPLOSIS**.

REDUVIA. A Whitlow; or a painful Crack at the Root of the Nails.

REFE. A Thread doubled and twisted. It is the same as **ACIA**.

REFECTIO. The same as **ANALEPSIS**. *Fabricius ab Aquapendente*.

REFICIENTIA. The same as **ANALEPTICA**.

REFINATIO. Refination; that is, Depuration; a Term used with respect to Metals, and Sugar.

REFRIGERATIO. The same as **CATAPSYXIS**.

REFRIGERATORIUM. A Refrigeratory. This is a Vessel filled with Water, thro' which the Worm passes in Distillations. The Use is to condense the Vapours, as they pass thro' the Worm. *Vigani* takes Notice of another Sort of Refrigeratory, *Medull. Chym. Tab. 2. Fig. 5. f.* which consists of a Vessel filled with common Salt.

REGENERATIO. The same as **PALINGENESIA**.

REGIMEN. The Regulation of Diet, with a View of preserving, or restoring Health. See **DIÆTA**. *Regimen* in Chymistry, is the Regulation of Fires.

REGINA. The same as **BAEILIS**.

REGINA PRATI. A Name for the **ULMARIA**, Meadow-Sweet.

REGIO. A Region. In Anatomy this is applied to many Parts of the Body. Thus the Parts adjacent to the Navel are denominated the Umbilical Region; and the Parts about the *Hypochondria*, the Region of the Hypochondria, or Hypochondriacal Region.

REGIONALIS MORBUS. An Endemial Disease.

REGISTERES. Registers, in Chymical Furnaces, are Air Vents, by opening or closing of which the Operator regulates the Fire at Pleasure: For when they are opened, the Heat of the Fire increases; when closed, it abates.

REGIUS MORBUS. This Name is, by different Authors, apply'd to several Distempers; but *Celsus*, the Standard for Medicinal Latin, means by this the Jaundice. Other Authors call the King's Evil, and others the Epilepsy, by this Name.

In Chymistry the *Aqua Regia* is a corrosive Water, which dissolves Gold. See **AQUA**. And in Pharmacy *Regius* is a pompous Epithet, apply'd to many Medicines.

REGNUM. A Kingdom. The *Materia Medica* is divided into three Kingdoms; the Animal, Vegetable and Mineral.

REGULUS. The Metalline Part of Minerals, which remains in the Bottom of a Crucible, after the Separation of the *Scoria*, is called *Regulus*, or *Rex*.

REGULUS, is the Wren.

REJECTIO. A Casting up of any Thing preternaturally by the Mouth, either by way of Expectoration or Vomit.

REI, or **REBUS.** Sour Milk. *Rulandus*.

RELAXANTIA. Relaxing Medicines.

RELAXATIO. Relaxation. See **FINRA**.

RELOLLÆUM. A Term used by *Paracelsus*, and his Followers, which it is not easy to affix any Meaning to. *Helmont*, in his Treatise intitled *Natura contrariorum nescia*, defines it an efficient Quality, not proceeding from the Ferments and Seeds of Things. *Relollæa*, says he, are of two Sorts; one in *Corpore proprio*, the other in *alieno*. Amongst the *Relollæa propria* some are separable, as Cold from Water and Air; others inseparable, as Heat from the Light of the Sun, a Candle, or Fire. The *Relollæum alienum* perishes, if not supported; and is, therefore, called transient; of this Sort is Heat in Water.

REMINISCENTIA. The same as **ANAMNESIS**.

REMISSIO. A Remission of a Distemper is, when it is mitigated considerably, but does not entirely cease; for when it does, it is then called an Intermision.

REMORA. Offic. Aldrov. de Pisc. 335. Bellon. de Aquat. 405. Charlt. de Pisc. 6. Jonst. de Pisc. 7. Raii Synop. Pisc. 71. *Iperuquiba & Piraquiba Brasiliensibus*, Marcg. 180. Raii Ichth. 119. *Echenei seu Remora*, Imperat. 684. **THE SUCKING-FISH.**

It is taken in the main Sea. As to its Virtues, it restrains Venery, prevents Abortion, and retains the Fœtus till Maturity.

RENALE EMPLASTRUM. The Name of a Plaster described by *Ætius*, Tetrabib. 3. Serm. 3. C. 3.

RENCHUS. The Name of a Fish found in *Bavaria*, celebrated for being a delicious and good Aliment.

RENES. The Kidneys. These are by *Oribasius*, *Ætius*, and *Paulus Aegineta*, represented to be of difficult Digestion.

The Kidneys are two pretty solid, glandular Bodies, situated in the posterior Part of the Cavity of the Abdomen, on each Side of the Lumbar Vertebrae, between the last false Ribs, and *Ossa Ilium*. The Right Kidney lies under the great Lobe of the Liver, and is consequently lower than the Left, which lies under the Spleen.

The Figure of the Kidneys resembles that of a large Bean; their Circumference being convex on one Side, and concave on the other. The concave Side is turned to the Vertebrae, and the convex Side the opposite Way. Their Length answers to the Distance between the last false Rib and *Ossa Ilium*; they are about half as broad as long, and half as thick as broad.

In each Kidney we observe a Fore and Back-side; an upper and lower Extremity; a great and small Curvature, and a Convexity and Concavity.

The Back-side is broader than the Fore-side, and the upper Extremity is a little broader and more incurvated than the lower. The Depression in the small Curvature is oblong and uneven, resembling a Sinus, surrounded by several Tubercles; and as it is turned a little toward the Fore-side, this Side is something narrower than the other.

The descending Aorta and inferior Vena Cava, lie between the Kidneys, pretty close to the Bodies of the Vertebrae, and to each other; the Artery being on the Left Hand, and the Vein on the Right. Each of these large Vessels sends out transversely towards each Side, commonly one capital Branch, which goes to the Kidney, and enters the Sinus and Depression thereof, by several Ramifications.

These Vessels were by the Ancients termed the emulgent Arteries and Veins, but I chuse rather to call them the Renal Veins and Arteries. Sometimes there are more than one of each Kind, which is ofteneft found in the Arteries; sometimes on one Side only, and sometimes on both.

The Artery and Vein are not of an equal Length, and the Difference depends on the Situation of the Aorta and Vena Cava; for the Left Renal Artery is shorter than the Right, because the Aorta lies nearest the Left Kidney; and the Left Renal Vein is longer than the Right, because the Vena Cava lies furthest from the Left Kidney.

These Vessels are likewise disposed in such a manner, as that the Veins lie more anteriorly than the Arteries; because the Aorta lies close to the Spina Dorfi; whereas the Vena Cava, which perforates the Diaphragm at some Distance from the Vertebrae, does not join them, till after it has given off the Renal Veins.

Each Renal Artery is surrounded by a nervous Net-work, called *Plexus Renalis*, which furnishes a great Number of Filaments to the Kidneys, that come partly from the semilunar Ganglions of the two great sympathetic Nerves, and partly from the *Plexus Hepaticus* and *Splenicus*. This Renal Plexus sends likewise some Filaments round the Renal Veins.

The Kidneys are surrounded by a very loose, membranous and cellular Covering, called *Membrana Adiposa*, because in fat Persons the Cells of this Substance are filled with Fat. This was for a long time mistaken for a Duplication of the Peritonæum, the true membranous Lamina of which covers only the Fore-side of the Kidneys; and consequently they lie without the Peritonæum; because the Portion of that Membrane that covers them cannot be looked upon as an entire Coat; so that the only common Coat they have, is the cellular Substance, which likewise invests the Renal Arteries and Veins in Form of a Vagina.

The proper Coat or Membrane of the Kidneys is composed of two Laminæ; between which there is likewise a very fine cellular Substance, which may be made sensible by blowing through a Pipe between the two Laminæ.

The external Lamina is very thin, and adheres closely to the internal Lamina, by means of the cellular Substance. The internal Lamina penetrates every where by numerous Elongations, into the Substance of the Kidney, from which it cannot be separated without Tearing.

The Surface of the external Lamina is very smooth, polished, and shining, and it renders the whole Surface of the Kidney very even and uniform in Adults. In Children, this convex Surface is in a manner divided into several Lobes or Tubercles, almost as in Oxen and Calves; and in grown Persons we sometimes observe the same Inequalities.

The Blood-Vessels having entered the Kidneys, are ramified every way; and these Ramifications send out other capillary Branches, which go all the Way to the Surface, where they appear like irregular Stars, and furnish the proper Membrane of the Kidneys. Sometimes these two Ramifications penetrate to the *Membrana Adiposa*, and communicate there with the Adipose Veins and Arteries.

The proper Membrane having surrounded the Kidney, all the way to the Sinus, joins the Vessels at that Place, and accompanies all their Ramifications through the Body of the Kidney, in form of a Vagina or Capsula; and likewise contributes, in part, to form the Pelvis and Calyces, or Infundibula.

We sometimes observe a considerable Vessel to go in or come out from the convex Surface of the Kidney; but this is not common; and in that Case, there is a Depression by which the proper Membrane enters, and communicates with that Portion which goes in by the Sinus.

The *Tunica Adiposa*, or common Coat, which likewise invests the great Vessels to their Entry into the Kidneys, does not seem to accompany them any farther; but terminates at the Sinus, in the Interstices between the Ramifications.

We may distinguish three Kinds of Substances in the Kidney; an exterior Substance, which is thick, granulated, and in a manner cortical; a middle Substance, which is medullary and radiated, called *Striata*, *Sulcata*, or *Tubularis*, because it seems to be made up of radiated Tubes; and an inner Substance, which is only a Continuation of the second; and terminates on the Inside by Papillæ; for which reason I have given it the Name of *Papillaris*.

These three Substances may be seen distinctly in a Kidney cut into two equal Parts through the great Curvature. The cortical Substance may be observed round the whole Circumference; and by the Microscope we perceive it to be of a spongy, granulated, and waving Texture; all its Parts adhering together in a radiated Manner. Its Colour is a bright whitish Grey.

By fine anatomical Injections and in Inflammations, we discover an Infinity of small capillary Vessels, which run in various Directions, between and round the different Portions of this Substance; and by the Help of a Microscope, we likewise see great Numbers of small red Corpuscles more or less round, and disposed almost like Bunches of Currants. These small Corpuscles are, perhaps, only the Extremities of the cut Vessels, filled either with Blood, or with a coloured Injection.

The other two Substances, that is, the medullary or striated and papillary, are really but one and the same Mass, of a more reddish Colour, the convex Side of which rises at several Places into narrow Tubercles, lodged in the same Number of Cavities or Depressions. The radiated Striæ are afterwards continued to

the papillary Portion ; and the Papillæ form, in some measure, so many Centers of these Radii, opposite to the Tubercles.

The medullary Substance is likewise distinguished from the cortical, by the arterial and venal Arches, which send capillary Ramifications on all Hands ; and its Colour is more or less red.

The Papillæ, which are only a Continuation of the medullary Substance, as has been said, are often a little paler than that Substance. They are ten or twelve in Number, very distinct from each other, resembling the same Number of Cones, with very broad Bases and obtuse Apices.

At the Point of each Papilla we see, even without a Microscope, in a small Depression, several very small Holes, through which little Drops may be perceived to run when the Papillæ are compressed. These are little Drops of Urine, which being filtered, partly in the cortical, and partly in the medullary or tubular Substance, do afterwards pass through the Substance of the Papillæ, and are discharged by these Orifices.

Each Papilla lies in a kind of membranous Calyx or Infundibulum, which opens into a common Cavity, called the *Pelvis*. This Pelvis is membranous, being of the same Structure with the Calyces of which it is a Continuation ; and its Cavity in Man is not uniform, but distinguished into three Portions, each of which contains a certain Number of Infundibula, or Calyces, together with the Papillæ which lie therein ; and sometimes we find two or three Papillæ in the same Infundibulum.

At the Place where these Infundibula surround the Bases of the Papillæ, they send Productions into the medullary or radiated Substance of the Kidney, which accompany the Blood Vessels, and serve for Capsules or Vaginæ to all the vascular Arches, both arterial and venal, and to their different Ramifications, quite through the cortical Substance, and as far as the Surface of the Kidney.

URETERS.

After the Infundibula have contracted in a conical Form round the Apices of the Papillæ, each of them forms a small short Tube or Gullet, which uniting at different Distances along the Bottom of the Sinus of the Kidney, form three large Tubes, which go out from the Sinus, in an oblique Direction from above downwards, and immediately afterwards unite into one Trunk.

This Trunk becomes a very long Canal, called the Ureter. In Men the three Tubes supply the Place of what is called the Pelvis in Brutes, and might more properly be called the Roots and Branches of the Ureters than the Pelvis ; which Name would agree best to the Trunk, as being larger than the rest of the Ureter. The Ureters are commonly two in Number, one for each Kidney ; but sometimes there are more than two.

The Situation of the Trunk, and of the Roots and Branches of each Ureter, with respect to the renal Artery and Vein, is in the following Manner ; the Artery is in the upper Part of the Sinus, and partly before the Vein. The Vein is about the Middle, and between the Artery and Ureter. The Ureter is in the lower Part, a little behind the Vein, and it is partly surrounded by one Branch of the Artery.

This Disposition appears plainer near the anterior than near the posterior Side of the Kidney, because this last is broader than the former ; and we likewise see there the three Branches of the Ureter, of which the uppermost is the longest, and the lowest is the shortest, because of their oblique Direction downward.

From this Description we see that in the human Kidney there is no other common or uniform Pelvis, but the Trunk or Head of the Ureter, and the three great Branches. To have a true Idea of their Disposition, we must imagine, that the Ureter enters the Kidney by the lower Part of the oblong Sinus ; that it increases gradually in Breadth as it advances, and that it is divided into three Branches, before it enters the Substance of the Kidney.

One of these Branches may be reckoned a direct Continuation of the Ureter, and it is longer than the rest ; being extended from the lower to the upper Part of the Sinus, and it may be found without much Preparation. The other two Branches are shorter, and cannot be well discovered without an artificial Separation. The Angles between these Branches at their Bases, or at the Head of the Ureter, are not pointed as those of other Ramifications ; but formed by a round Incurvation, which is generally surrounded by Fat.

These first Branches of the Ureters produce other small Branches at the Bottom of the Sinus, which are disposed in Pairs. These small collateral Branches extend in Breadth, and form the Infundibula or Calyces, in which the Papillæ are lodged ; the great Circumference of which produces, in the Substance of the Kidney, the different Vaginæ of the vascular Arches, and of their Ramifications. The internal Lamina of the Kidney is continued round these Vaginæ ; and the exter-

nal Lamina is expanded round the first Branches, round the Trunk, and round all the rest of the Ureter.

If the Trunk of the Ureter be split on that Side which is next the Vertebrae, and this Section be continued to the Extremity of the superior Branch ; we may observe, immediately above the Trunk, two Holes lying near each other, which are the Orifices of the small collateral Branches, and Gullets of the Infundibula. A little above these Holes, there are other two very much like them ; and so on all the Way to the Extremity of the superior Branch, which terminates likewise by these Gullets of the Infundibula. And in each of these Gullets we may observe, at least, the Apex of one Papilla.

A Section begun on the Convex Surface of the Kidney, and carried from thence to the Trunk of the Ureter, discovers the Extent of the Papillæ very plainly, and likewise the Infundibula, their Gullets, &c.

The Ureters run down obliquely, and with a very small Degree of Inflexion, from the Kidneys on the lateral Parts of the inner or anterior Side of the Os sacrum, and passing between the Rectum and Bladder, they terminate in the last of these Viscera.

They are composed of three proper Coats ; the first of which, that surrounds the rest, is of a whitish Colour, and of a very compact filamentary Texture, being stretched with Difficulty, and appearing like a filamentary Substance degenerated. The next Coat is of a reddish Colour, stronger than the first, and made up of different Strata of Fibres, which intersect each other ; but it is very hard to determine whether they are muscular or simply membranous.

The innermost Coat is in some Measure Ligamentary, and lined by a very fine Membrane, which covers a very delicate reticular Texture of Vessels. It is slightly granulated like shorn Velvet ; and moistened all over by a mucilaginous Liquor. It has several longitudinal Rugæ, which are intersected by a great Number of small transverse Rugæ.

Besides these proper Coats, the Ureters are invested by the cellular Substance of the Peritonæum, the membranous Lamina of which covers likewise about two thirds of their Circumference, sometimes more sometimes less, but never surrounds them entirely. So that when they are examined in their natural Situation, they appear like Ropes lying behind the Peritonæum, and jutting out more or less towards the Cavity of the Abdomen, together with that Portion of the Peritonæum, which covers them.

All that has been said about the Structure of the Ureters, Pelvis, Arches, Striæ, Fossulae, and Holes at the Apex of the Papillæ, appears most distinctly, when these Parts are examined in clear Water.

GLANDULÆ RENALES, VULGO CAPSULÆ ATRABILARIÆ.
Immediately above each Kidney lies a glandular Body, called by the Ancients *Capsula Atrabilariæ* ; by others *Capsula Renales*, *Renes Succenturiati*, and *Glandulae Renales* ; and they might be properly enough termed *Glandulae supra Renales*. They are situated on the upper Extremity of each Kidney, a little obliquely ; that is, more toward the inner Edge and Sinus of the Kidney, than toward the outer convex Edge.

Each Gland is an oblong Body with three Sides, three Edges and two Points, like an irregular Crescent with its great or Convex Edge, sharp, and the small concave Edge, broad. Its Length is about two Thirds of the greatest Breadth of the Kidney ; and the Breadth of its middle Portion is about one third of its Extent between the two Extremities, sometimes more sometimes less. Its Colour is a dark yellow.

It has one anterior, one posterior, and one lower Side, which last may be termed the Basis ; and it has one upper, and two lower Edges, whereof one is anterior, the other posterior. The upper Edge may be called the Crista, and the two lower Edges, the Labia. One of its Extremities is internal, or turned inward toward the Sinus of the Kidney ; the other is external, or turned outward toward the gibbous Part of the Kidney. The Figure of this glandular Body may also be compared to that of a single Cock's Comb, or to the Top of an Helmet.

The Surface of these Glands is uneven ; the Foreside is the broadest, and the lowest Side or Basis the narrowest. Along the Middle of the anterior Side, a Ridge runs from the Edge of the inner Extremity, a little above the Basis, to the Joint of the other Extremity, and divides this Side into two equal Parts, like the Middle Rib of the Leaf of a Tree, and on the lower Side under the Basis, there is a kind of Raphe or Suture.

The Blood-Vessels of these Glands come from the Renal and Diaphragmatical Veins and Arteries, and also from the Aorta and Vena Cava, and from the Celiac Artery. These Vessels are termed the Capsular Arteries and Veins ; and as they enter the Glands, they seem to be invested by a Vagina. They are not always derived from the same Sources, neither is their Number the same in all Subjects ; and there is commonly a pretty large Vein, which runs along the Ridge. The Nerves

on each Side are furnished by the neighbouring femilunar Ganglion, and by the Renal Plexus, which depends on it.

In the Inside of these Capsulæ, there is a narrow triangular Cavity, the Surface of which is full of short strong Villi of a yellowish Colour; but in Children it is reddish, and of a dark brown in aged People. The Sides of this Cavity are connected by a great Number of Filaments; and they appear to be wholly glandular, that is, to be filled with very fine small folliculous Corpufcles. Along the Top of the Gland, these Sides touch each other immediately.

In Opening this Cavity, we find a granulated or follicular Substance, which fills it almost entirely; and the Blood-Vessels are distributed on this Substance, as well as on the Sides of the Cavity. If the Section be begun at the great Extremity of the Capsula, and be continued through the upper Edge; and if the lateral Portions be afterwards separated, the glandular Body appears like a kind of Crista, raised from the Middle of the Bottom of the Cavity.

This glandular Body or Nucleus, adheres more closely to the Bottom or Basis of the Cavity, than to the two Sides, especially near the great Extremity; but yet it may be separated both from the Basis and Sides, being connected to them by a great Number of small Filaments. It adheres least to the Basis near the small Extremity.

The Capsular Vein, which comes ordinarily from the Renal Vein, is much larger than the Arteries; and it communicates with the Inside of the Capsula, much in the same manner as the Splenic Vein with the Cells of the Spleen; for it may be inflated by blowing into any Part of the Capsular Cavity, and the Air also passes into the Renal Vein.

This Cavity contains an unctuous viscid Liquor, of a yellowish red Colour, which, with Age, changes gradually into a yellowish purple, a dark yellow, and a black yellow; and sometimes it is perfectly black; but even then, if it be spread thin on a large Surface, it appears yellow. I have sometimes found it not only reddish, but mixed with real Blood.

The Uses of these Renal Glands have not as yet been discovered; and all that we know about the Liquor contained in them, is, that it resembles the Bile. They are very large in the Fœtus, and diminish in Adults. These two Phænomena deserve our Attention.

They lie sometimes directly on the Top of the Kidneys, but I never found them on the gibbous Part. The Gland on the Right-Side is partly connected to the Diaphragm, under and very near the Adhesion of the great Lobe of the Liver to that Muscle. That on the Left-Side adheres to the Diaphragm below the Spleen; and both these Connexions are confined to the contiguous Portions of the inferior Muscle of the Diaphragm. They are involved together with the Kidneys, in the Membrana Adiposa; of which a very thin Portion insinuates itself between the Kidneys and Glands, and also between them and the Diaphragm; so that they adhere to both by the Intervention of the cellular Substance, which, in some Subjects, contains a Stratum of Fat.

The Venal Ridge already mentioned, sinks so deep into the Fore-side in some Subjects, that the upper Part of this Side appears to be separated from the lower; but this is seen most distinctly when the Capsula is examined in clear Water.

When the Capsular Vein is opened lengthwise with the Point of a Lancet, we discover in it a great many small Holes, many of which are only the Orifices of the Branches of the Vein; others are simple Holes; and it is, perhaps, through these that the Air passes into the Gland, as already mentioned.

On the outer Surface of these Capsulæ, we observe a very thin distinct Coat, separate from the cellular Substance that surrounds them. Sometimes this Coat is raised by an uneven Stratum of Fat, which makes it appear granulated; and for the same reason, the Capsulæ are of a pale Colour, like a *Corpus Adiposum*.

The Liquor contained in them appears sometimes in the Fœtus, and, in young Children, of a bluish Colour, inclined to red.

To be able to discover the Uses of these Capsulæ, we must not only attend to the two Circumstances already mentioned, but also to their external Conformation, which is commonly more regular in the Fœtus, and in Children, than in Adults and in old People. We must also consider the Consistence and Solidity of their Substance, which is greater before Birth, and in Childhood, than in an advanced, or Old-Age; in which they are often very flaccid, and very much decayed: And this, perhaps, may be the Reason why the Figures given of these Glands, taken out of their Membrana Adiposa, are so very irregular and different from what I have demonstrated for above twenty Years past.

Valsalva endeavours to prove, the *Renes Succenturiati*, or *Glandule Renales*, to be Organs of Generation, or assistant to them; and gives the following Reasons for his Opinion: He observes the seminary Vessels of several Fowls to come from

these Capsulæ, before they are sent from the Testicles. In the Viper and Water Tortoise, he remarks such membranous Connexions between the *Renes Succenturiati* and the Testicles, as make it probable that some Excretions are sent through the Capsulæ to the Testicles. He affirms his having seen Vessels that were neither nervous, sanguiferous nor lymphatic, going from the human Capsulæ to the Testes. His Observations are much the same as to Females. To these he subjoins the Consent and Sympathy observed by Physicians between the Loins and the natural or genital Parts. To confirm all, he relates the following Experiment: He cut away one Testicle, and extirpated the Kidney of the opposite Side of a Whelp. The Wounds healed, but the Creature was of a very lax Habit, and was so far from attempting Coition with Bitches, that he did not seem fond of them when they were proud.

Valsalva had endeavoured to secure the Honour of this Discovery to himself, by entering a publick Protest, that no other should claim it. Mr. *Ranby* suspected that the Duct, which the *Italian Literary Journals* mentioned as the principal Part of this Discovery, was no other than an Artery sent off from that of the Capsula on each Side, to the Testicles of Men, and Ovaria of Women. *Edinburgh Medical Essays*, Vol. II. p. 372.

THE URINARY BLADDER.

The Bladder is a kind of membranous and fleshy Pouch or Bottle, capable of Dilatation and Contraction, situated in the lower Part of the Abdomen, immediately behind the Symphysis of the Ossa Pubis, and opposite to the Beginning of the Intestinum Rectum. The Figure of it is nearly that of a short Oval. It is broader on the Fore and Back-sides, than on the lateral Parts; rounder above than below, when empty, and broader below than above, when full.

It is divided into the Body, Neck and Bottom, into an anterior, posterior, and two lateral Parts. The upper Part is termed the Fundus or Bottom, and the Neck is a Portion of the lower Part, which is contracted like the Gullet of some Vessels.

The Bladder is made up of several Coats, almost like the Stomach. That Part of the external Coat which covers the upper, posterior and lateral Sides of the Bladder, is the true Lamina or Membrane of the Peritoneum; and the rest of it is surrounded by a cellular Substance, by the Intervention of which, the Peritonæum is connected to the Muscular Coat.

The proper Coats are three in Number, one muscular, one nervous, and one villous, which is the innermost. The Muscular Coat is composed of several Strata of fleshy Fibres; the outermost of which are mostly longitudinal; the next to these are more inclined toward each hand; and the innermost, more and more oblique; and they become at length almost transverse. All these Fibres intersect each other in various manners, and they are connected together by a fine cellular Substance, and may be separated by inflating that Substance.

The nervous Coat is nearly of the same Structure with the Nervous Coat of the Stomach.

The internal Coat is something granulated and glandular, and a mucilaginous Serum is continually discharged through it, which moistens the inner Surface of the Bladder, and defends it against the Acrimony of the Urine. It appears sometimes altogether uneven on the Inner-side, being full of Eminences and irregular Rugæ when empty, and in its natural State of Contraction. These Inequalities disappear when the Bladder is full, or when it is artificially distended by Air, or by injecting any Liquid.

At the Top of the Bladder, above the Symphysis of the Ossa Pubis, we observe a ligamentary Rope, which runs up between the Peritonæum and the Linea Alba of the Abdomen, all the Way to the Navel, diminishing gradually in Thickness, as it ascends. This Rope had a particular Use in the Fœtus. It is sufficient to add, that it is in part originally a Production of the inner Coats of the Bladder, which Production is termed *Urachus*.

This Rope is composed also of two other ligamentary Elongations, which are the Extremities of the umbilical Arteries. These Arteries come from the Hypogastrica, run up by the Sides of the Bladder, and remain hollow and filled with Blood, even in Adults, as high as the Middle of the Bladder, through all which Space they also send off Ramifications. Afterwards they lose their Cavity, and become ligamentary as they ascend. At the upper Part of the Bladder, they approach each other, and, joining the Urachus, form that Rope, which may be termed the superior Ligament of the Bladder.

The external Fibres of the muscular Coat are more numerous than the internal; and the most longitudinal anterior Fibres form a kind of Incurvation round the Urachus, at the Top of the Bladder, much like that of one of the fleshy Portions, which surround the superior Orifice of the Stomach, and lower Extremity of the Oesophagus. This Incurvation passes behind the Urachus.

The Portion of the Peritonæum, which covers the posterior

rior Convex Side of the Bladder, forms a very prominent transverse Fold, when the Bladder is contracted, which disappears when the Bladder is extended. This Fold surrounds the posterior Half of the Bladder, and its two Extremities are elongated toward each Side; by which Elongations a kind of lateral Ligaments of the Body of the Bladder is formed, which are more considerable in Children than in Adults.

The lower Part of the Bladder, which deserves the Name of Fundus much better than the upper Part, is perforated by three Openings, one anterior and two posterior. The anterior Opening is formed by an Elongation of all the proper Coats, in Form of a Gullet, turned much in the same Manner with the inner Orifice of the Rostrum of the Head of an Alembic. This Elongation is called the Neck of the Bladder.

The other two Openings, in the true Bottom of the Bladder, are formed by the Ureters, which, in their Course downward, run behind the Spermatic Vessels, and then behind the lower Part of the Bladder, approaching each other. Each Ureter lies between the umbilical Artery and Vas Deferens of the same Side, the Artery lying on the Outside of the Ureter, and the Vas Deferens on the Inside.

Afterwards they get between the Vasa Deferentia, and the Bladder, crossing these Canals; and then at about a Finger's Breadth from each other, they begin to pierce the Coats of the Bladder. They run a little Way between the muscular and nervous Coats, and open into the Bladder obliquely, something nearer each other, than when they first entered its Coats.

The Orifices of the Ureters in the Bladder are something oval, and narrower than the Cavity of the Ureters immediately above them. The Edge of these Orifices is very thin, and seems to be formed merely by the Union of the internal Coat of the Bladder, with that of the Ureters.

The Arteries of the Bladder are furnished by the *Hypogastricæ* or *Iliacæ internæ*, being Branches of the *Arteria Sciatica*, *Epigastrica* and *Umbilicalis* on each Side. The Veins come from those of the same Names with the Arteries.

The Nerves of the Bladder come from the *Crurales*, and also from the *Sympathetici Maximi*, by Means of their Communication with the *Crurales*. It has also some Nerves from the *Plexus Mesentericus inferior*.

Besides the Ligaments already mentioned, there are also two small ones, by which the anterior Part of the true Bottom of the Bladder is connected to the *Ossa Pubis*. *Winflow's Anatomy*.

As the Kidneys, especially that on the Right Side, are by their Situation and Connection capable of being greatly assisted in their Excretory Office, by the Motion of the adjacent Parts; and as they are defended by the Membrane of the circumambient Peritonæum, and wrapt up in a kind of dry Fat; so they almost constantly receive the superincumbent Glands into their superior Part, which inclines somewhat to a Concave, and which is hardly ever of the same Form and Bulk in different Men. Then receiving one or more considerable Ramifications from the Aorta Descendens; acquiring, also, another Membrane, and four or five large Ramifications, they from these receive many other smaller Ramifications, from which winding Vessels, so small as to escape the Sight, are distributed through all the Parts of the Kidneys. The small Ramifications of these minute Arteries, in their vermicular Course, being mutually united in some Parts, and again separated, form as it were Conglomerations, from which seem to arise not only the small returning Veins, but also the minute lateral Ducts, which are almost pellucid, and which receive the Urine separated from the small Arteries, convey it from them; and when, after uniting, they have formed many polygonous pyramidal Bodies, they at last generally terminate in twelve membranaceous Bodies, called *Papillæ*, in which many Orifices of the renal Ducts open obliquely every where, both externally and internally.

There are also found in the Substance of the Kidneys, small round hollow Bodies, every where covered with minute Vessels, furnished with Veins and Nerves, and reaching to the urinary Ducts. This is confirmed by the Kidneys of Hedgehogs, Tortoises, and Diseases in the Kidneys, as also the Sight of the Kidneys in a Fœtus. For this Reason the Urine seems here to be secreted, by a double Apparatus, a curious and laborious one of the glandular Kind, and one more simple, which receives its Name from *Ruyfch*, a Circumstance by no means repugnant to the usual Methods of Nature in other Parts; as in the Liver for Instance. But *Ruyfch*, after the most strict and exact Scrutiny, thinks that these were not really Glands, but only Intorfions of small Arteries.

The other Part of the renal Artery is necessarily employed in supplying Life and Heat to the Substance of the Kidneys; and from the Blood, conveyed by this Part of the Artery, seems to arise that large Quantity of Lymph, which returning from the Kidneys, and being of the laudable and not of

the excrementitious kind, mixes with the Chyle, circulates with the Blood, and does not taste like Urine. Hence, also, there will, without Doubt, arise proper corresponding Veins.

For the small Veins arising from the minute Roots of the renal Arteries being collected, become larger, are united like Arteries in their Division; and at last join Trunks whose Number is uncertain. These convey in various Manners to the Vena Cava the remaining Blood.

The Renal Papillæ drop out the Urine convey'd into the urinary Ducts into the large Cavity, form'd by the expanded Membrane of the Pelvis, which is furnished with a soft Fat. Hence being collected, retarded and mix'd, it is forced into the Ureters, which are formed by an Angustation of the Pelvis, and which convey it to the Bladder.

For from the Circumference of the Papillæ arise about eleven or twelve Canals, which receive, and convey the Liquor discharged from them into three large Ramifications, which, when collected into one, form a large Pelvis, which terminates in one membranous, thick and strong Duct, furnish'd with Arteries, Veins, Nerves, lymphatic Vessels, moving Fibres, and mucilaginous Lacunæ, fit for lubricating its Sides. This Duct is called the Ureter, which running first strait downwards, and soon after bending all along under the Lamina of the Peritonæum; and being in various Places of an unequal Breadth, is at last inserted in the posterior Part of the Bladder, about two Finger Breadths from its inferior Neck, and about the same Distance from each other. Then perforating the exterior Coat, and running, about a Finger's Breadth, between it and the anterior Coat; and running down obliquely, it penetrates into the Cavity of the Bladder. Then its Fibres being lengthened, and running downwards, it forms a round and long Body, by which the Bladder, when full, is hindered from returning the Urine to the Ureters; which, when the Bladder is expanded, are drawn downwards, and clos'd up by this Body, and convey the renal Urine safe to the Bladder: And this Structure hinders the Urine from rising again into the Ureters, however the Bladder should be compressed.

All these Observations are confirm'd by microscopical Discoveries, Injections, Ligatures, and comparative Anatomy, in Hedge-Hogs, Dormice, Tortoises, Bears, Oxen, Birds, human Fœtuses, the Dissection of Patients subject to Disorders of the Reins, and monstrous and preternatural Kidneys.

Hence we may understand, that the mechanical Secretion of the Urine is made by the Force of the Heart and stronger Arteries, by which the aqueous Part of the Blood is forced into numberless Flexures, Gyration, Resistences, opposite Motions, Concussions, and Commixtions; and at last its more fluid Part is secreted, propell'd, collected and expell'd through Ducts, only somewhat narrower than these Blood-Vessels.

There is, therefore, no Occasion for accounting for the Secretion of the Urine by Attraction, Emulsion, or other Powers of a like Nature.

Neither is there any Necessity for a Fermentation, in order to account for this; since, in this Affair, neither the Place, the Cause, the Time, the Matter, the Mixture, nor the Effects of a Fermentation are to be observed.

Nor for the same Reasons are we to suppose a fusing and precipitating Power in the Parts subservient to this Secretion.

'Tis sufficiently obvious, that all the Humours, which are less thick than the Urine, will be discharged this Way, provided they are only applied to these Vessels. Hence we understand, that there is a Cause which hinders them from flowing here; or if they do that, sudden and great Weakness must be produced. The Renes Succenturiati always lying on the superior Parts of the Kidneys; but being separated from them by the interposed Fat, contiguous to the Diaphragm, united by Blood-Vessels, pressed between the Diaphragm and the Kidneys, furnished with Arteries, wanting peculiar Emisseries, in Fabric resembling the Spleen, and subject to the same Things, and pouring almost all their Blood through their Veins into the emulgent Veins, perhaps here performs this Office, the venous renal Blood being, by a saline Solvent, depriv'd of its most liquid Part, after the Secretion of the Urine, as the splenic Blood does to the Blood of the Vena Portæ; or perhaps these are subservient to other Uses. But this Theory is in all Probability just.

So that a continual and uninterrupted Secretion of the Urine is the primary Cause of the Soundness of the Kidneys and Ureters, as also the Cause why they are neither obstructed nor concreted by their own Collapsion or Pressure. *Boerh. Institut.*

PROCESSES UPON URINE.

Urine is neither acid, nor alkaline, but fetid.

Take the Urine of a Man in Health, made twelve Hours after Eating or Drinking, which must therefore have remained

so long in the Body, and have circulated almost the same time therein, and have been mixed with nearly all the Juices in all the Vessels, by means of the vital Powers. It is therefore an aqueous Lixivium, that has washed away, and brought off with it, whatever would dissolve in Water, and run thro' the fine urinary Vessels of the Kidneys; particularly it contains the spirituous, saline, and saponaceous Matters of the Blood; and when thus long retained and digested, it acquires the true Nature of the Body, as being wrought upon by the vital Powers for twelve Hours successively; at which time the Milk has lost its own Nature in the Body, and now begins to be converted into the Serum of the Blood. And for this Reason, such Urine should be chose as is well concocted, and discharged at twelve Hours Distance from Feeding, the thinner and more crude being come away before. Such Urine, therefore, may always be collected without the Body, and yet retain and perfectly exhibit the Nature of the animal Juices, and their Principles. This Urine is not acid, because it neither tastes nor smells sour, nor gives a red Colour by mixing with these Juices, that turn red with Acid: And, lastly, because, if heated and mixed with Oil of Tartar per Deliquium, it affords not the least Sign of Effervescence. And if another Part thereof be heated and mixed with the alkaline Spirit of Sal Ammoniac, it manifests no Sign of Effervescence; besides, what seems stranger, the Urine of a Man who drank a large Quantity of Rhenish Wine, which is considerably sour, and also of four Beer, used much Vinegar in his Sauce, and eat largely of Fruit, did not afford the least Signs of Acid, upon any Experiment, twelve Hours after Eating. So likewise the Urine discharged by young Female Persons of weak Constitutions, that use little more than acid Vegetables for their Meat and Milk for their Drink, manifests no Acid twelve Hours after Meals; the natural Powers, therefore, have in this time conquered that Tendency which the Vegetables had to Acidity, or else the Acid that was in them. *Helmont*, therefore, justly said, that Acids were Enemies to the Veins; but his Followers hence unjustly forbid the Use of Acids in Diet and Medicine, as if they were poisonous; supposing them prejudicial to the first Passages. These Experiments will be allowed by Chymists; but it may, perhaps, move them to hear, that there is no manner of Alkali contained in this Urine, and yet the thing is certain; for if, to separate Particles of this heated Urine, there be successively poured Vinegar, Lemon-Juice, Spirit of Nitre, Spirit of Salt, and Oil of Vitriol, no Effervescence ensues; but these Acids, mixed with warm Urine, discharged at the Distance of twelve Hours after Eating, unite therewith, as Water unites with Water, without Bubbles and without Hissing. Such Urine, also, does not turn the Juices of Herbs to a green Colour, as alkaline Salts do.

R E M A R K S.

Hence we may collect, that the Powers of the Body change Acids, so that they remain no longer the same, and prevent Things disposed to Acidity from becoming acid; and that, in Health, alkaline Salts are never produced, but only such as are neutral. This I have observed in the Urine of Persons in high Fevers, and inflammatory Diseases, where the vital Actions being increased, rendered the Urine flame-colour'd, fetid, sharp, and little in Quantity; for even such Urine, examined by the Methods above-mentioned, gave new Signs of its being alkaline; whence I was led to consider, whether, in a perfect Stoppage of Urine, where this Liquor is long detained, heated and agitated in the Body, it would not become alkaline. And it happened, that an eminent Person in Years, falling into this Distemper, which proved fatal to him, had no Discharge of Urine for five Days, but, on the sixth, suddenly made a few Ounces, which was red, turbid, and fetid; but he had hence no Relief, and made not a Drop afterwards, but died. This Urine I directly carried home with me, and presently examined by the known chymical Methods, none of which shew'd it to be alkaline; whence I understood, that Urine could not become alkaline in the Space of a hundred and twenty Hours, tho' agitated by the Heat of the Body, and the Action of Circulation. For in the Patient above-mentioned, the Bladder contained no Urine; and I have never found any of the Humours in Health to be alkaline, though they may become so from other Causes. Nor did I ever find them alkaline in the most putrid Diseases, whether acute or chronic. I remember once, an aged Corn-Merchant had a large Stone in his Bladder, but being not a fit Subject to be cut for it, his Urine would often, when he was in exquisite Torture, smell alkaline; and as he had frequent Stoppages, a skillful Surgeon was obliged often to put back the Stone from the Neck of the Bladder, with a Catheter, towards the Bottom; but being once absent, the Patient continued in Pain, without making Water for several Hours; but the Operator returning, and performing his usual Office, the Urine came out so sharp, Alkaline and putrified, and with such a peculiar

Stench of digested Urine, that the Surgeon inadvertently drawing the Vapour thereof into his Lungs, was thereby disordered for some Days. Whence I conceive, not having any Opportunity of examining this Urine, because it was spilt, that, being attracted into the Pores of the Spongy Stone, and lodging therein, it was thus digested by the Heat, and so, perhaps, acquired a true alkaline Acrimony. However this be, it is certain, that the Urine contains no native alkaline Salt, and, consequently, no other Humour of the Body; because the Urine contains more Salts than any other animal Liquor; and because the Salts of the Urine are more acrimonious, and easier rendered alkaline, than of any other Liquor in the Body. Whence those Artists are greatly deceived, who so loudly cry out against the natural, volatile, oily, alkaline Salts in the Body. This is an Error introduced into Medicine by an imprudent Cultivation of Chemistry, which the more prudent Cultivation thereof must correct. The fetid Smell of Urine in Health is, therefore, entirely owing to the attenuating, putrid, and volatilized Oil, which is inseparable from it; and not to a volatile, alkaline Salt. Its bitter, nauseous, and saline Taste, proceeds from the compound Salt of the Urine, and from the Oil; as also, from the Sea-Salt which Urine generally contains.

FRESH URINE, DISTILLED IN A VERY CLOSE VESSEL, AFFORDS A FETID, NAUSEOUS WATER, NEITHER ALCALINE, ACID, SALINE, NOR VINOUS.

Take well-concocted human Urine, discharged in Health, and distil it in a Glass-Body, with a gentle Fire of a hundred and fifty Degrees, uniformly kept up, till only a twentieth Part remains behind. There will come over a limpid Water; the Urine in the mean time gradually changes from its natural Straw-Colour to Red; and the more of this pellucid Water comes over, the deeper that red Colour appears; and at length the Remainder becomes almost of black Red, very thick, turbid, opaque, frothy, and tenacious. The first limpid Part has a particular nauseous Smell, but not that of a volatile Alkali; but what seems strange, though it be often distilled over again, yet it always retains this nauseous Odour, and even though it should long stand in the open Air. This corrupt Odour, therefore, is inseparable, and intimately mixed with the Liquor, so as not to be destroyed even by the Addition of an Acid. It seems to resemble nothing more than that disagreeable Exhalation, which arises from Wounds in the Abdomen, or the Carcass of a Man fresh opened after a violent Death. The nauseous Taste of that Water, though somewhat putrid, is not alkaline, or any way saline, howsoever it be distilled. Again, in Distillation thereof, there appear no Veins upon the Glass Still-head, as in the Distillation of vinous Spirits; and if the Water that first comes over, be a second time distilled, neither thus will the least Quantity of any such Spirit appear; and though ever so carefully rectified, it has, so often as I have examined it, never took Flame, but always quenched Fire. Even the Urine of such Men as are great Drinkers of strong Liquors, such as Wines and distilled Spirits, never affords any thing inflammable. When this first distilled Liquor of the Urine is mixed with Acids, it never gives any Signs of Effervescence, nor changes Juices green, as Alkalies always do; nor considerably precipitates the Solutions made with Acids; and by no manner of Rectification will it afford a manifest Salt, nor ever change Acids into a compound neutral Salt. Consequently it is no alkaline Liquor; nor does it manifest the least Signs of Acidity upon any kind of Experiments; as the Addition of fixed and volatile Alkalies, the various Juices that turn red with Acids, and the like. Whence we seem to have proved our Point.

R E M A R K S.

We may learn many momentous Particulars in Medicine, from this slight Experiment. Thus, 1. We see the lightest, thinnest, and most volatile Part of the healthy Juices is nearly elementary Water, excepting that there is inseparably joined therewith that other equally light, thin, volatile, fetid and seemingly corrupted Matter, not proceeding from a saline Principle, but rather from an oily one, and yet no ways vinous or inflammable. 2. Hence there is no Fermentation in the Juices, nor no Production of inflammable Spirit, which is easily separated from Water; whereas this fetid Part can by no Means be separated from its Water. 3. Consequently, there is no inflammable Spirit in the vital Juices of the Body. 4. Oil, by the vital Powers of the Body, is rendered much more volatile, than any Salt in the Body, contrary to what is generally believed. This peculiar, fetid, oily Matter is scarce otherwise found, than in the Matter of Perspiration, the Sweat, and the Vapour which naturally resides in the Cavities of the Body. Vinous Spirits, when drank, do not go to the

urinary

urinary Passages; and may, therefore, rise to the Head, disturb the Brain, the common Sensory, and the Origin of the Nerves; and hence (perhaps) they so wonderfully affect the Actions of the Cerebrum and Cerebellum. Hence (perhaps) it is, that they so easily exhale from the Body, possibly at the Surface of the Skin. Our present Process also shews, that there is no volatile Salt in the Body, capable of rising with this Degree of Heat, whatever Chymists or Physicians may think to the contrary; and that there is no volatile Alkali, whether simple or oily, nor any volatile Acid in the Body; so that the modern Physic must be greatly corrected in these Particulars. The fetid Smell of the Urine always increases and decreases, as the vital Powers increase and decrease, in a healthy Body; and the more the Body is exercised by Labour and Motion, the more this fetid Smell is always increased, and *vice versa*. If any Thing in the animal Juices is to be called Spirit, on Account of its Acrimony, Volatility, Lightness and penetrating Virtue, it is neither vinous nor saline, but really arises from an Oil corrupted, or turned to such a Putrefaction as the Putrefaction of Vegetables.

THE REMAINS OF THE RECENT URINE, AFTER THE PRECEDING PROCESS, ARE NEITHER ACID, NOR ALKALINE, NOR TRULY SAPONACEOUS, BUT SALINE AND FETID.

If the gross Remainder, after the preceding Distillation, be mix'd with any kind of Acid or Alkali, it affords no Sign of Effervescence, so as to appear either acid or alkaline; nor can it be manifested by any other Experiment. It is indeed highly sharp, of a very saline Taste, and a little bitterish, but not alkaline; nor has it an alkaline Odour, but smells fetid almost as before. If used by Fullers and Wool-Scourers, it neither cleanses nor deterges, and therefore has no saponaceous Virtue, which it excellently acquires by putrefying. In this whole Inspissation there appears no Signs either of Chyle or Milk. Nor have I, with the utmost Attention, ever discovered the least of that Coagulation, which the Lymph and Serum of the Blood always run into by Heat. However treated, it manifests nothing of a cheesy Nature; but constantly the more it is inspissated by the Fire, the sharper and deeper-coloured it becomes; and thus, by various Degrees, it increases and changes in Colour, Thickness and Acrimony, the longer the Inspissation is continued, so as to run through all that Diversity usually observed in the Urine, under acute and chronical Distempers, as a *Bellini* has excellently observed. In acute Diseases, the hotter the Fever, and the more it dissipates the moist Parts, the redder, the sharper, and the thicker the Urine becomes.

REMARKS.

There is therefore naturally no fixed or volatile Alkali in a healthy Body, nor any fixed or volatile Acid in the natural Juices, whilst they remain sound; but this Salt is of a particular Nature, which we shall hereafter examine, and much less volatile than Water, as not rising even with a boiling Heat. It is surprising that no nutrimental Matter should ever be contained in this Urine; for there is no Chyle, Milk, Curd, Serum, or Lymph therein, which coagulate by Fire; but Physicians justly acknowledge these as the original Matter of Nutrition. Nothing nutrimental, therefore, is discharged from the Body along with the Urine. Thus all the Parts of the Chyle, Milk, Blood, or the Humours thence prepared, that become sharp, corrupted, subtle, unfit for Nutrition, and hurtful to the Body, having performed their Office, are at length separated by the Vital Powers, and, by means of the Kidneys, discharged from the Body. Urine, therefore, exhibits the Humours highly changed by the Powers of the Body, even so far as never afterwards to prove healthful thereto; and therefore the small Quantity, the Sharpness, Colour and Thickness of the Urine, afford many just Informations to the Physician, as indicating the Necessity of Water, demonstrating the Condition and State of the Humours, the Remedies required in Diseases, and what Things are principally destructive to the Body, by dissolving the Texture of the Blood, and how pernicious a great Fluidity is.

RECENT URINE, INSPISSATED TO A FORTIETH PART, AND DISTILLED WITH SAND, AFFORDS AN ALKALINE SPIRIT, AN ALKALINE, VOLATILE SALT, A VERY FETID OIL, AND SALINE FÆCES.

If the Distillation of the Urine be continued, till of forty Pounds there remains but one; or if the like recent Urine be suffered to exhale in a low, capacious, cylindrical open Vessel, with an almost boiling Heat, till only a fortieth Part remains, there will be found at the Bottom a gross, thick, blackish, sharp Matter, which being mixed with thrice its Weight of clean Sand, and then distilled in a Retort, in a Sand-heat, by gentle Degrees at first, and often examining the Liquors that come over, by removing the Receiver, a lim-

pid Water will first rise, as in the preceding Process; and when the Matter begins to be almost dry, another limpid Liquor will come over, of a sharp, fiery alkaline Nature. Continue the Operation so long as this rises, and keep it separate, then closely lute on a Receiver, and urge the Matter by Degrees of Fire, upon which white Clouds will long continue to rise, and unctuous Veins appear, whilst a somewhat oily, yellow Liquor, together with a white, solid and alkaline Salt will rise. At last, with the utmost Violence of Fire, there comes over a yellow or gold-coloured Oil, and when this ceases, a saline, feculent Matter remains at the Bottom. The first Water is scarce alkaline, sharp, saline, or any Way oily, but like the Water of the preceding Process; the second Liquor has a sharp and manifest saline Odour, it proves pungent and fiery upon the Tongue, and has a perfect alkaline Taste; it makes a violent Effervescence with all Acids, and when saturated with any Acid, concretes therewith into a compound, neutral, half volatile Salt, like Sal Ammoniac, but of a determinate Nature, according to that of the Acid. This Salt therefore is truly alkaline and volatile, like that produced from the Putrefaction of Vegetables. All this appears more in the third unctuous Liquor, which is much more intensely alkaline, tho' oily; and hence is usually called alkaline Spirit, as consisting of Water, Salt and Oil, mixed together. The whole Salt is always alkaline, but rendered very ungrateful by the fetid Oil adhering thereto. The Oil which comes over at the same time, and afterwards is highly fetid, and infects every Thing with its Odour, so as to be intolerable, and not only retains the Smell of Urine, but is somewhat stercoraceous. The remaining Fæces being calcined in an open Fire, and elixated with Water, afford a true Sea-salt, if the Person has used that Salt in his Food.

REMARKS.

Hence it appears that the Salt of Urine, tho' not alkaline of itself, may be rendered so by a certain Degree of Heat, and that this urinous Salt is not ammoniacal, because Sal Ammoniac, tho' volatile with a certain Degree of Heat, yet when sublimed thereby, never becomes alkaline, but remains compounded, how often soever it is sublimed; whereas the Salt of Urine, tho' likewise of a half fixed Nature, and becoming volatile with a certain Degree of Heat, at the same time also becomes alkaline, and no longer retains the Nature of a compound Salt. It therefore approaches to the Nature of alkaline Salt, and Sal Ammoniac, tho' itself be neither of them. Hence also we see that the Salt, saline Spirit, and first Oil, are almost equally volatile in a sound State; and that this unctuous Spirit consists of Water, Oil, and Salt, into which it may be commodiously resolved. And hence also we understand, how by the natural Powers, the mild, white, indolent, inodorous, and unctuous Matter of the Aliment, Chyle, Milk, Fat, and Marrow, may turn into another that is sharp, yellow, inflammatory, thin and fetid; whence also the fetid Smell of the Urine usually proceeds. Again, we hence learn, that there is no fixed Alkali in the animal Juices; for I never could find a Grain thereof in the largest Quantity of the Urine thus treated. And lastly, that Sea-Salt may enter the Blood, mix therewith, thence pass into the urinary Vessels, and yet remain unchanged, so as to act through most of the Vessels of the Body, without suffering an Alteration by their Re-action. All which Particulars being considered, our present Experiment, which is owing to *Hellmont*, will be found of infinite Use in Medicine.

RECENT INSPISSATED URINE, DISTILLED WITH FIXED ALCALI.

Fresh Urine being inspissated as before, pour thereon an equal Quantity of the Oil of Tartar *per deliquium*, or the Solution of Pot-ashes, and there will instantly arise a sharp, alkaline, volatile Vapour, such as usually proceeds from well-putrefied Urine, when it grows warm. If the Mixture be now immediately distilled in a Glass Alembic, with a gentle Fire, there comes over a limpid Liquor, running in Veins, which proves sharp, highly alkaline, and more volatile than Water, and in every respect resembling true and strong Alkali. And when instead of the Oil of Tartar, the dry Salt of Tartar is used, a dry alkaline Salt often rises first in this Distillation. And when the former alkaline Liquor is again distilled in a tall Body, with a gentle Fire, the Part that first rises is saline, white and alkaline; the Oil remains at the Bottom, along with the fixed Alkali added, as if it was more fixed thereby. Lastly, when all is become dry, if the Fire be strongly kept up, there likewise comes over a fetid, yellow Oil after the Salt.

REMARKS.

This Experiment shews the Nature of the animal urinous Salts to be such, that a fixed alkaline Salt can instantly change them, like the violent Action of the Fire in the preceding Process. And hence we learn that fixed alkaline Salts being

mixed with the Juices of the Body, will presently render them sharp, alkaline, extremely moveable, and more volatile than the Water and Spirit of the Body, communicate a fiery corrosive Nature to the Spirits, and immediately give them a Tendency to Putrefaction. If the Salt and Saline Spirit thus produced be several times distilled over again with a gentle Fire, they at length become as purely alkaline as those prepared from Hartshorn, or other costly Substances: When mixed with Acids, they make a violent Effervescence, especially if shaken together, and by this Means, are so mortified and changed as to lose their Sharpness, and all their alkaline or fiery Nature, being thus also so fixed, as not to prove volatile with the Heat of an healthy Body. They lose the proper Virtue of acting like volatile Alkalies, especially that of almost mortally dissolving and attenuating the Juices of the Body. And what is more to our Purpose, Physicians may hence understand the surprizingly changeable Nature of the Salts of the Body; how variously they may alter from their native Disposition; and the proper Effects of each Alteration; and also learn the Remedies and Degree of Correction which each requires: All which were known to the Ancients from Experience. Thus in Fevers, attended with an increased Heat and Motion, *Hippocrates* allowed only of Things tending to an acid Nature, or actually acid, to be used as Food, Drink, or Medicines; and hence we see, that fixed Alkalies are destructive in the Body, as often as attended with Heat, Motion, a fetid Smell, a Flame-Colour, or small Quantity of the Urine, or the Juices are too much dissolved; so that in such Cases to exhibit these Salts is highly dangerous, especially in the Plague.

RECENT URINE, ESPECIALLY WHEN INSPISSATED, AFFORDS A FIERY SPIRIT THAT IS NOT ALCALINE, UPON THE ADDITION OF QUICK-LIME.

If Quick-Lime be thrown into recent Urine, there instantly exhales a spontaneous Vapour, which strikes the Nostrils with an extremely pungent and fiery Sensation; and if it be now directly and gently distilled in very close Vessels, it affords a limpid Water, of an intolerable fiery Odour, like the former, but much more sharp and volatile. And if, when the Urine is first inspissated to a fourth Part, an equal Quantity of Quick-Lime be mixed with the Remainder, the Odour is much stronger, and the Spirit obtained by Distillation, not to be equalled by any other for its sharp, fiery, subtle, and volatile Nature. After all this Spirit is separated by Distillation, and the remaining Mass afterwards treated by the same Operation, it will never afford a solid Salt, as in the preceding Process; but always a very fluid saline Liquor; and whatever Acid is mixed therewith, it causes no Effervescence, tho' the fiery Virtue and Volatility are greatly diminished thereby. There is Caution required in this Process; for as soon as the Quick-Lime touches the Urine, or the inspissated Matter thereof, it excites a great Ebullition, and a violent Heat, and at the same Instant the most sharp and volatile Spirit hitherto known arises; and, being agitated with the violent Heat, it is put into a furious Motion, so that being inadvertently received into the Lungs, it may instantly prove highly dangerous, and occasion an instantaneous Inflammation in the tender Vessels of the Lungs, and directly communicate it to the Blood circulating through them. For if this Spirit be held to the external warm Skin, it immediately makes the Part gangrenate and mortify; but perhaps the whole Thickness, between the circulating Blood in the Lungs, and the Air contained in the Vesicles thereof, is not the thousandth Part of an Inch; but this urinous Spirit, prepared with Quick-Lime, suddenly exhales its sharp Part in the open Air, and leaves a Water behind.

REMARKS.

Hence we may learn the Action of Quick-Lime upon the saline urinous Juices of the Body; for when assisted by Heat, and the vital Motion, it presently generates these fiery Spirits, that prove destructive to the tender pulpy Mass of the Brain and Nerves; and the hotter, or the more agitated the Body, or the more it is affected with inflammatory Disorders, the more destructive the Use hereof. But when the Body abounds with Acid, Water or Phlegm, the prudent Application thereof may be sometimes of Service. We must also consider, that the Lixivium of Quick-Lime has a great Force in correcting, and extricating the muriatic, fixed Salts in the Blood, and fitting them to be easily discharged; whence it becomes an extraordinary Remedy in that Kind of Scurvy, which principally proceeds from the above-mentioned Causes; but in that Kind which proceeds from Putrefaction, and consists in a sharp Oil and Salt, it proves highly prejudicial. Whence, perhaps, we may, in some Measure reconcile the Experiments of some eminent Physicians in *France*, which shew the Lixi-

vium of Quick-Lime to be pernicious in that Country; whereas in *Germany* it appears a very advantageous Medicine. But all this holds truer of the Quick-Lime prepared from Stone than of that from Shells. The Particulars hence arising seem to be these. 1. The violent Corrosion which happens in a live Body, upon the Application of Quick-Lime, proceeds more from those fiery saline Spirits, which the Lime produces from the Salt, than from the sharpness of the Lime itself. 2. Hence it may be of Use in Diseases proceeding from acid, aqueous, austere, viscous, mucous, and phlegmy Causes, where Motion and Stimulation are wanting. 3. On the contrary, it proves hurtful in acute Distempers, proceeding from alkaline, bilious, saline, putrid, acrimonious, and heating Causes, where the Body is dry and strongly agitated by Motion. 4. The mild Salts of the Body may instantaneously become extremely sharp and poisonous, by the bare Admixture of a Thing not sharp itself. 5. That an exceeding sharp Matter may be produced from healthy Juices, which is neither a Salt, Spirit, nor Oil; for this Liquor cannot, by any Art that I know of, be made to appear in the solid Form of a Salt, and can be only obtained invisible by Means of Water. 6. These Spirits therefore that do not appear to be alkaline, by any Experiments made with Acids, are much sharper than any Alkali; so that there is not any known Thing that yields a sharper and more odorous Vapour. Whence also it appears, how suddenly a very different Taste and Smell may arise from the Salt of the Body, which is almost inodorous.

THE NATIVE SALT OF URINE.

Take very fresh Urine, discharged twelve Hours after eating by a Man in Health, and immediately, by a gentle Fire of two hundred Degrees, evaporate it in a clean Vessel, till it acquires the Consistence of Cream. Then strain the Liquor hot through a Flannel Bag, that the viscous Oils may be somewhat kept back and separated, which the more exactly it is done, the better. Set a large Quantity of this inspissated Liquor, in a tall, cylindrical, glass Vessel, tied over with Paper in a cool Place, for a Year; during which Time, a saline, solid, hard, brown, and somewhat transparent Mass will concrete to the Bottom thereof; and a thick, black, unctuous Liquor float above it, as separated and excluded from the Salt. Pour off the Liquor, and putting the saline Mass into another Vessel, add very cold Water thereto, and shake it a little therein, to cleanse it from its oily Foulness, which is easily done, because the Matter does not readily dissolve in cold Water. Let this saline Mass be preserved under the Title of the native Salt of Urine. If this Salt be dissolved in Water, and several Times strained, till the Solution becomes limpid, and then exhaled to a Pellicle in a clean Glass, and set to rest in a cool Place, it shoots into saline Glebes, of its own peculiar Kind, very different from any other Salt, tho' somewhat resembling the Crystals of Sugar, in Figure and Hardness. They are not fetid or alkaline, but extremely volatile; and this is the purified Salt of Urine.

REMARKS.

This Experiment excellently shews Physicians the Nature of those Salts, which in an healthy Body are very sharp, and greatly inclining to an alkaline Nature, yet not really alkaline; and therefore require to be quickly discharged by the vital Powers, to which they however owe their Origin. And hence Physicians may know, that the other Salts contained in the other Juices, are much less sharp or alkaline. These Salts are generated in the human Body alone, from the Meat, Drink, and Sea-Salt taken in and changed. There is Sea-Salt contained herein, but not alone. It is a saponaceous Salt, but not very unctuous. It is highly diuretic, if drank diluted with Water, and sudorific with a proper Regimen. It has such extraordinary Effects upon Metals, that some have thence promised themselves Wonders. All the fat Matter, which remains upon straining, and cleansing the inspissated Urine, is, when dried by a gentle Fire, excellent for the producing of Phosphorus; for which End it may be preserved. The Experiment also shews, that the Salt remaining in the Urine, thus inspissated, will not putrify or grow alkaline, so as to become volatile and easily fly off, tho' they are otherwise so easily changed. It should be considered what Share this Salt has in producing the Stone of the Bladder or Kidneys.

URINE, BY DIGESTION, TURNS ALCALINE, AND CHANGES ITS COLOUR, TASTE, ODOUR, AND VIRTUES.

If such Urine as was described in the first Process, be kept in an open Vessel of Glass, Earth, Wood, or Metal, in an Air of thirty three Degrees of Warmth, it begins to smell fetid, putrely, and change its Straw Colour for a dusky brown,

brown, depositing gross Fæces, and thus in a few Days acquiring an alkaline lixivious Nature, and at the same time striking a stony Crust on all the Sides of the Vessel. The hotter the Air is, the stronger and quicker the Change of the Urine is made; whence in the Summer-time, especially when the Weather is hot, all this happens in a greater Degree. To discover how far this changeable Nature would reach, I filled a Bottle with natural recent Urine, and corking it close, set it in a moderately warm Place; and after three Months, I found it changed in this close Vessel, as is described in the preceding Case. And herein the Change principally consists; the recent Urine of a Man in Health is of a straw Colour, it daily proceeds through successive Changes, till at length it ends in a deep brown; and the more it is putrified, the darker the Colour. And the same Thing is observable in the Urine of Persons under a Fever; the State of the Juices being learnt from the Colour of the Water. Recent Urine smells ungrateful, though not alkaline; but digested Urine has a manifestly fetid, volatile, alkaline Odour, very different from the other. Recent Urine is of a bitter, saline Taste; but digested Urine putrid, sharp, alkaline, and perfectly lixivious. Recent Urine affords no Signs of containing an Alkali; but digested Urine makes an Ebullition, and a violent Effervescence, upon mixing with any Acid, and in every other Trial, manifests a true alkaline Nature. Recent Urine has no saponaceous scouring Virtue; but digested putrified Urine is used by Scourers and Dyers, as a sharp Lie, that cleanses foul Wool, Silk, and the like, after the manner of fix'd Alkalies: And as these Changes happen, with a small Degree of Heat in a close Vessel, which every one may be easily satisfied of by Trial, it is in vain for Chemists to deny this Property in Urine.

R E M A R K S.

We are here to consider, that there is separated from the Body, by the urinary Passages, a Water containing Salts and Oils, approaching to a State of Putrefaction; nor do we find in all the Body, another Fluid that is so easily changed by such a Digestion in close Vessels. Urine, therefore, which is destin'd for Excretion, cleanses the Blood from these noxious, putrid Substances; and, therefore, if retain'd through any Distemper, it produces mortal Effects, as being soon rendered sharper by the Heat of the Body, and thence presently intolerable to the finer Vessels, and dissolving to the Humours by a pernicious Relaxation. And as it thus easily and suddenly acquires these new Properties in a close Vessel, with a moderate Heat, we are shewn that the Body neither produces Vinegar, nor inflammable Spirit from what it takes in, and consequently does not act by Fermentation, but introduces the true Change of a putrified Substance, and therefore in its Effect, approaches nearer to the Nature of the Putrefaction of Vegetables; for if bare Stagnation can occasion this Change of the Urine, how greatly must it be disposed to a true Putrefaction? And hence we see how great Necessity there is of Water, Acids, and saline Matters in those Persons who live in hot Climates, and accustom themselves to daily Labour and Exercise; for by Meats, Drinks, and Sauces of this Kind, too great a Tendency to Putrefaction is prevented. Hence also the daily Necessity of a mild, somewhat acid, and a new Chyle, for sheathing the Acrimony produced in the Blood. Hence also it appears, that in twenty-four Hours the necessary Utility and Service of this new Chyle vanishes; and that fresh Assistance is likewise required from the same Means. In burning Fevers, therefore, tart, acid, and mild Aliments, like Chyle, are extremely necessary; great Abstinence being in these Cases highly prejudicial. Hence it is that Barley Pofans, with Vinegar and Honey, are here so serviceable, as *Hippocrates* prudently inculcates, in his incomparable Book concerning the Diet in acute Diseases. The Physician also, upon examining the Urine, by means of these Experiments, may learn many useful Particulars, with regard to the Change of the Oil and Salt thereof; and perceive that a true Stone may be generated from the Urine of a Man in Health, even by Rest, and while the Urine putrifies, or grows alkaline; and therefore that Attenuation, Alkalies and Putrefaction, do not prevent the Origin of the Stone, since it may be generated and not dissolved even in putrified Urine. Hence, therefore, as Tartar is generated in the best Wine, so is the Stone generated, and not dissolved, in the Urine elaborated by the vital Powers: Therefore, volatile alkaline Salts are in vain given to prevent the Generation of the Stone. The following Experiment I have seen with Horror. Upon filling a clean Glass Bottle with the recent Urine of a healthy Person, and setting it by for some time, then pouring out the putrified Liquor for Distillation, there was a stony Crust all round the Inside of the Glass. Without washing this off, I filled it with fresh Urine, set it by as before, and afterwards emptied it. And by repeating this several Times, I at length found the whole

Surface of the Glass crusted over with the Matter of the Stone. This Production of a stony Matter seems very destructive, though necessary to the Body. It may perhaps seem strange, why the Body should not therefore putrify by its own vital Heat and Motion, since it so soon putrifies the wholesomest Juices; and since dead Carcases, exposed in Air heated to eighty Degrees, in a few Hours putrify, resolve away, and fly into Air, leaving only the Bones behind: But Chemistry supplies us with this Answer, that such a Putrefaction is prevented by the Meat, Drink, Sauces, Air, and sometimes the Medicines used, which resist Putrefaction; otherwise, in burning Fevers, the whole Structure of the Body would presently be dissolved by Putrefaction.

DIGESTED URINE AFFORDS BY DISTILLATION AN ALCALINE SPIRIT, A FETID OIL, A VOLATILE, ALCALINE SALT, PHOSPHORUS AND SEA-SALTS.

Take Urine digested according to the foregoing Process, distil it, with a gentle Fire, in a low Glass Body; there first arise Veins of Liquor running in the Form of unctuous Spirits. The Receiver being changed, and the Fire a little increased, there follow dewy Drops, resembling Water; and this Water may be accurately separated till the Matter remains almost dry, which again being urged by Degrees, and at length by a strong Fire, will afford a yellow and very fetid Oil, along with something saline; black Fæces will remain behind, which, when burnt in an open Fire, become a white Calx, that with Water resolves into Sea-salt, and a fixed, insipid, subtle Earth. The first Water is fetid, sharp, fiery, perfectly alkaline, and makes a violent Effervescence with Acids. If this be distilled in a tall Vessel, by a gentle Fire, it affords a white, solid, truly alkaline Salt; and leaves a Water of an ungrateful Smell and Taste behind. When the Water that came over second is long distilled in a tall Vessel, with a gentle Fire, it affords somewhat of the former Spirit; which being carefully separated, and the remaining Water distilled in a clean Vessel, it affords a Liquor which *Helmont* recommends, in his Treatise on the Stone, for an admirable Lithontriptic. There here appears no fixed Alkaline Salt, but a true Sea-salt, if the Person used much thereof; but when I desire to obtain a large Quantity of the Salt, I usually proceed thus.

I put a hundred Weight of Urine into a large low Vessel that widens upwards, and inspissate by boiling, with Care to prevent the unctuous Matter from boiling over; and being left, till the whole acquires the Consistence of Honey, I put a large Quantity of this into an open cylindrical Glass, and expose it for some Months in a warm Room, so that it may be well putrefied. I afterwards put the Glass into an Iron Pot, to the Mouth whereof a large earthen Still-head may be commodiously fitted, and closely luted; the Head has a long Pipe, to which I apply a capacious Receiver, then raise the Fire by Degrees, upon which an incredible Quantity of a white alkaline Salt arises, next a yellow Oil that taints the former Salt, and with it another Salt somewhat more fixed. I urge the Fire till the Pot begins to grow red hot, at which Time the Oil and the last Salt come over. Then suffering the Iron Pot to cool a little, while the fixed Matter continues sufficiently hot, I take away the Receiver, and put up all that was raised into Glass Bottles, and stop them close. This afterwards resolves into Spirit, Salt, and Oil, as the former. If what now remains at the Bottom be mixed with twice or thrice its Weight of Wood-Coal, and then put into little coated Retorts, and urged with the utmost Violence of Fire for sixteen Hours, into Receivers filled with Water, and so placed as to bury the Necks of the Retorts under Water, little blue Masses of Matter will at length come over, and fall to the Bottom of the Receivers, whence they are collected, so as to be gathered together under Water, in a small Vessel; which being set over the Fire, so as to be very hot, the Matter of the Phosphorus melts without dissolving in the hot Water, and runs into one Mass, like melted Wax; and may be afterwards preserved for twenty Years, or more, under Water, without losing its Virtue. But if another Part be taken of the Mass, as it remains in the Pot, and calcined in an open Fire to a white Calx, this Calx, when put into Water, communicates a saline Matter thereto; and which, when reduced, proves to be true Sea-salt, that remained thus unchanged through all the Digestions of the Body, and even after such a long continued Putrefaction and Distillation. That it is a true Sea salt, appears manifest from the Taste, but more particularly, because, when mixed with *Aqua fortis*, it dissolves Gold; so that there is no fixed alkaline Salt found even in this Urine; but whatever it contains of saline, is either of the volatile Kind, or Sea-salt.

REMARKS.

This is the true Analysis of Urine after Putrefaction, where it affords all the same Matters as that which is distilled fresh, though with a less Heat and in an inverted Order. Putrefaction renders the Salts more volatile than Water, and makes those alkaline which were not alkaline before; it renders the Oil sharper, more fetid, and more volatile, yet produces no inflammable Spirit, no fix'd or volatile Acid, nor any fix'd Alkali. Yet these two Salts appear differently volatile; the first whereof easily rises and separates almost pure; the other with more Difficulty, slower, and mixed with a copious Oil, not easily to be separated from it, and requires a large, and in part the strongest Fire to raise it. I once urged the prepared Faces of Urine, with the most violent Fire for the making of Phosphorus, and was surprized to find how long this saline Matter continued to come over, after having so long suffered the Violence of a former Fire; but this Salt was strangely dense, yellow, fetid, and fix'd to the Sides of the Retort. All Acids, therefore, are here changed into a neutral, saline Substance, by the vital Powers; yet this neutral Salt becomes truly alkaline by Putrefaction, and more volatile than any hitherto known, even than Alcohol itself. This Putrefaction volatilizes all the saline Matters of Animals and Vegetables, but can neither convert Sea-salt into an Alkali, or render it volatile. Some eminent Chemists have said, that an Acid might, by the Force of Fire, be drawn from the Faces of Urine, remaining after its Distillation: And I have found this true, where common Salt was largely used by the Person, and not changed, as was above observed, but remaining plentifully in the Faces: For being thus mixed in a large Proportion of Earth, the extreme Violence of the Fire drives over the Acid of the Salt, which has thus been hastily taken for the Acid of the natural Juices: Yet it must be acknowledg'd that Phosphorus spontaneously resolves into an Acid by the Air, not greatly differing from the Oil, or acid Spirits of Vitriol or Sulphur; whence it makes a kind of Compound Body with Quicksilver. But whence this Acid should proceed I am at a Loss to know, as also of what Nature it is. Certainly it suits neither with Animals or Vegetables; perhaps, Alum might be added in the Preparation; for thus it may be obtained to Advantage; and the acid Spirit of Alum is very like that of Vitriol. On the other hand, it has appeared by Experiments, that Fowls feeding upon Vegetables inclined to Acidity, and drinking nothing but Water, while they were cooped up, and being afterwards calcined with an open Fire, together with all their Excrement, afforded Faces that contained nothing either of acid, or of an alkaline Nature. If a Spirit highly saturated with volatile, alkaline Salt be highly rectified, it becomes limpid; but if afterwards long kept, it changes brown, and generally deposits something terrestrial to the Bottom and Sides of the Vessel. Let it be examin'd whether this is not that volatile Earth, which rises with the first Spirit of putrefied Urine, that tarnishes the Glass so as not to be got off again but by the other subsequent Spirit, which, though scarcely saline, spontaneously dissolves it; of which *Helmont* treats so largely in his noble Book of the Stone. This deserves to be thought of and tried, as being an easy Thing that has its Use. Certainly Alkalies rather generate the Stone; but if the second Liquor, which is not alkaline, dissolves the Stone, then Urine will contain both the Matter of the Stone and its Solvent. Sea-salt, therefore, does not generate the Stone, but rather resolves it, as hindering by its Saltiness, the Tendency of the Humours to an alkaline Nature and Putrefaction. Whence *Helmont* conceives, that Vinegar, Sea salt, and Sulphur, were the great antipestilential Remedies of *Hippocrates*, being used along with fumigated Wine; whence the Adepts declare, that Nature has lodged absolute Perfection in Salt. It does not however commodiously dissolve the Stone formed in the Urine, or the Concretions of the Gout.

Dr. *Langrish*, in his modern Theory and Practice of Physic, says, That the Kidneys are Organs designed by Nature to through out of the Body a recrementitious Liquor, which in Health is straw-coloured, or of a pale Yellow, and contains little or no Sediment, or seculent Matter; being in effect a Lixivium, in which a Portion of the animal Salts and Oil is dissolved and washed away. If, therefore, (as we have Reason to believe) the secretory Ducts of the Kidneys are more than ordinarily contracted, in an acute Fever, either by the sharp, acrid Salts and Oil stimulating them as they pass along, or else by the general Tension of the Vessels at that Time; or if the Union or Attraction between the serous and globular Parts of the Blood is so strong as not to be separated in the Renal Tubuli, we have a manifest Reason for the small Quantity of Urine.

Another Cause, indeed, may be the Velocity of the Fluids; for a strong and swift Circulation is an Hindrance to all Secretions, by reason they are perform'd by lateral Branches going off at or near Right Angles; and consequently a swift Circulation along or parallel to the Axis, carries along with it what should be laterally secreted.

As to the Colour of the Urine, that depends upon the Quantity of oily and sulphureous Particles wherewith it is impregnated; it being well known, that Oil or Sulphur is the Cause of all Colours in Liquors; since neither pure Salt, pure Water, nor pure Earth, can communicate any Colour at all. Add to this, that Oil gives the deeper Colour, the more it is attenuated and exalted by Heat and Motion. And again, when the increased Heat of the Body hath exalted the most fluid, aqueous Particles of the Blood, the Urine may become higher coloured, or intensely red, by the Proximity of the sulphureous Particles.

Hence we sometimes meet with Urine, so saturated with oily, saline, and terrene Particles, as to be a perfect Lixivium; and at other times, the Salts and Oil are not determined to the Bladder along with the Urine; that is, when the Fibres of the Kidneys are over and above contracted, or the Salts and Oil are not attenuated and divided enough, to suit the Orifices of the secreting Ducts, the Urine is as limpid and clear as common Water. The former of these argues an inflammatory Disposition of some of the inner Viscera; and the latter threatens Deliria, and Convulsions.

The rank fetid Smell, which often attends the Urine of Persons in ardent Fevers, proceeds from the Salts being volatilized and rendered alkaline, and the Oil tending towards Putrefaction; all which is repugnant to the natural State of the Fluids.

Towards the Crises of Fevers, when the saline, sulphureous, and terrene Particles, are attenuated and ground fine enough to pass through the Renal Tubuli, the Urine is loaded with Contents, and lets fall a thick Hypostasis, or turbid Sediment, after it has stood for some time. Since, therefore, the Urine, by its several Contents and Appearances, furnishes us with Signs as well diagnostic as prognostic, it ought to be inspected every Day, in order to deduce our curative Indications, or to make our medicinal Prediction with greater Certainty; either from the Cloud at the Top, the Eneoræma suspended as it were the Middle, or the Hypostasis or Sedimentum subsided to the Bottom: The last of which is the best Indication of a kindly and regular Concoction.

Thus by daily inspecting the Urine, we are taught the State and Progress of the Disease; and thereby enabled not only to make our Prediction, but we are, also, greatly directed thereby in our medicinal Practice. *Hippocrates* laid great Stress upon his Observations on the Urine. And our Countryman *Willis* is so sanguine as to tell us, that the Acidulæ or Spaw Waters do not more certainly shew the Nature of the hidden Mine, through which they are strained, than Urines give Testification of the divers Sorts of Dyscrasies of our Bodies and their Habitudes.

If, therefore, a bare Inspection of Urine is of such Advantage towards investigating the Nature, State, Progress, and Cure of Diseases; most certainly the natural History of it, or a more curious Search into the Contents of the Urine, in every Period of the Disease, will be of more moment in discovering the several Dyscrasies of the Blood, and in indicating the Method of Cure, than what we can meet with in the Urinal only. For this Reason, I thought it worth while to make the following Experiments, that by an exact Analysis we might see the different Contents of the Urine, and the various Proportions of its Principles.

A CHYMICAL ANALYSIS OF THE URINE, BOTH IN HEALTH AND IN ACUTE FEVERS.

EXPERIMENT I.

I took all the Urine that was made in the Space of twenty-four Hours, by a Man, thirty-five Years of Age, in perfect Health, and of a regular Life. I weighed out two Pound, and distilled it; by which means I gained

	Ounc.	Dr.	Gr.
1. Lymph	30	7	2
2. Volatile Salt		2	18
3. Oil			32
4. Cap. Mort. before Calcination		3	17
5. Cap. Mort. after Calcination		1	43
6. Fixed Salt			32

The greatest Part of the Lymph was pellucid, insipid, and inodorous, and exhibited no Signs of an Acid or an Alkali; but the latter Part was very strong and offensive, and fermented violently with Oil of Vitriol, made a white Precipitate

with Solution of Sublimate, and turned Syrup of Violets green.

When the volatile Salt first began to rise, it shot all over the Glass-head and Recipient into most beautiful Crystals; some of which resembled fine Boughs or Feathers; while others radiating from a Point or Centre, formed Stars or Roses of various Sizes.

When the volatile Salt was mixed with an acid, a stinking Vapour arose, which smelt like a nasty Corner where People have made Water for a long time.

I repeated this Experiment three Times, but as there was no material Alteration either in the Quantity or Quality of any of the Principles, it would be encroaching on the Patience of the Reader to insert those Processes.

EXPERIMENT II.

A young Lad, ten Years old, being seized with an acute Fever, attended with a Phrenzy, Subsultuses, and many other dangerous Symptoms, it continued till the eighth Day; on which moderate Sweats broke forth, and the Urine let fall a vast Hypostasis.

All the Urine which was made on the eighth and ninth Days, being saved by my Order, it amounted exactly to two Pounds; which being committed to the Still, it afforded,

	Ounc.	Dr.	Gr.
1. Lymph	30	2	
2. Volatile Salt		5	46
3. Oil		1	23
4. Cap. Mort. before Calcination		5	4
5. Cap. Mort. after Calcination		1	56
6. Fixed Salt			44

Hence we may not only observe a great Difference between the Contents of healthy Urine, and that made at the Crisis of a Fever; but we plainly see the Reason of the vast Advantages which generally accrue when the Urine is loaded with Contents, and lets fall a thick and turbid Sediment. For we have good Reason to believe, from this Experiment, that the greatest Part of the Hypostasis consisted of saline and sulphureous Particles, which, while in the Blood, irritated the Vessels, and increased the Fever.

The Lymph also seemed to be much stronger in this than in the former Experiment; and as it contained more volatile Salt and Oil, it fermented more violently, and smelt stronger when mixed with Oil of Vitriol.

EXPERIMENT III.

A young Woman, seventeen Years of Age, lay ill of an ardent Fever, and from the tenth to the fifteenth Day, the Urine came away involuntary; so that none could be saved, except about a Spoonful of limpid clear Water on the twelfth Day, at which time she was raving, gather'd up the Bed-Clothes, caught at imaginary Flies, and the like. On the thirteenth and fourteenth she lay comatose. The fifteenth she raved again, had strong Subsultuses, and a black parched Tongue. On this and the next Day, we saved eight Ounces of Urine, which was something deeper coloured than a Citron, smelt strong, and had a very thin bright Cloud swimming in the middle. This Urine being distilled, we procured,

	Ounc.	Dr.	Gr.
1. Lymph	7	5	
2. Volatile Salt			40
3. Oil			32
4. Cap. Mort. before Calcination		1	6
5. Cap. Mort. after Calcination			21
6. Fixed Salt			4

EXPERIMENT IV.

The dreadful Symptoms which attended this poor young Woman on the fifteenth and sixteenth Days, were something alleviated on the seventeenth, by a gentle breathing Sweat; but the Remission was very short, a Rigor succeeded, and the Fever seemed to return with greater Violence than ever. All that Night she raved much. The next Day, the eighteenth, I found her delirious, with frequent Catchings of the Tendons, and her Pulse so extremely quick as scarce to be counted.

Nine Ounces of Urine being saved on the seventeenth and eighteenth Days, I distilled eight Ounces of it, and obtained,

	Ounc.	Dr.	Gr.
1. Lymph	7	4	45
2. Volatile Salt			48
3. Oil			34
4. Caput Mort. before Calcination		1	10
5. Caput Mort. after Calcination			23
6. Fixed Salt			3

It may be proper to observe, that about four Ounces of this Urine, which was made during the little Remission of the Fever, was highly red at first; afterwards it grew thick and cloudy, and the next Morning it had a laudable Hypostasis subsided to the Bottom. The other Part was much the same with that of the former Process.

Having one Ounce of Urine to spare, and it smelling exceedingly rancid and strong, though the Glasses were very clean in which it was contained, I thought it worth while to try if I could possibly discover any alkaline Property in this Urine, before the Fire had any share in it; and accordingly I divided it into four Parts; to the first I let fall some Solution of Sublimate, which made no Alteration in it; to the second I dropt in some Solution of Alum, which also lay very quiet; to the third I added Oil of Vitriol, which manifestly gathered together, and collected the grosser, thicker Contents of the Urine (which, by shaking the Bottle before we weighed out what was distilled, were equally scattered all over, so as to render it of an even turbid Colour) into little Rags, and left the Interstices clear. With the fourth I mixed Oil of Tartar, which immediately dispersed the Thickness or Muddiness, and rendered it clear, and almost of a Straw-colour.

Hence it is evident, that though the Urine was not alkaline enough to raise a visible Fermentation with Acids; yet as the saline and oleaginous Particles were undoubtedly attracted and collected together by Oil of Vitriol, and repelled and dispersed by Oil of Tartar, we may reasonably conclude, that the prodigious Heat of the Body had exalted the Animal Salts and Oil to an alcalescent State. For this was the most intense Fever I ever met with; and as the Heat had been continued many Days, I am persuaded it might be the Cause of these Phenomena.

EXPERIMENT V.

On the 19th Day of this young Woman's Illness, we had a Remission for four Hours; during which Time she came to her Senses, drank plentifully; her Tendons were quiet, her Pulse regular, in comparison to what they had been; and by the Assistance of a Clyster we procured two Stools. In the Evening the Rigor returned, though not with so much Vehemence as on the 17th. The Fever, Delirium, Subsultus Tendinum, &c. soon succeeded; so that the Night was passed with great Inquietude. On the 20th in the Morning, she had two Hours Sleep, which greatly refreshed her, and slackened the Pulse both in its Hardness and Velocity. She now began to spit a good deal of frothy Matter; her Skin felt smoother and softer than it had done before; and the Urine on both these Days was loaded with Contents, and let fall a very thick Hypostasis. Eight Ounces of this Urine afforded,

	Ounc.	Dr.	Gr.
1. Lymph	7	3	32
2. Volatile Salt		1	38
3. Oil			53
4. Cap. Mort. before Calcination		1	12
5. Cap. Mort. after Calcination			26
6. Fixed Salt			54

Having mentioned in the former Experiment, that Oil of Vitriol plainly collected, and Oil of Tartar as manifestly dispersed the turbid Parts of the Urine, I was induced to try it again with some of this Urine before Distillation; because it seemed to be more impregnated with volatile Salts and Oil; and consequently it might exhibit the Phenomena more plainly. Accordingly I dropt a few Drops of Oil of Vitriol into an Ounce of it; from whence a fine white Froth arose to the Top of the Mixture, while the grosser Contents run together, and after some time subsided to the Bottom. The Ferment, indeed, was but weak; however, it was enough to discover, to any unprejudiced Person, an alkaline Matter in the Urine. I must confess, indeed, I have repeated this Experiment a great many times on the Urine of other Persons in ardent Fevers, and never could observe the same Appearances; but, as I said before, since all the Vessels which received this Urine were very clean, and since the Heat was most extreme, as well as of very long Continuance, I am positively sure the Phenomena proceeded from an alkaline Disposition in the Urine.

EXPERIMENT VI.

On the twentieth Night this young Woman slept well. The next Morning I found her greatly refreshed, though not free from the Fever. All that Day, and the next, she continued mending; she spit much, had little breathing Sweats, and a Multitude of Contents in the Urine. All the Urine she made on the 21st and 22d Days, being mixed together, and shook, in order to disperse the Contents equally, I distilled eight Ounces, and obtained,

1. Lymph

REN

	Ounc.	Dr.	Gr.
1. Lymph	7	3	20
2. Volatile Salt		1	42
3. Oil		1	8
4. Cap. Mort. before Calcination			54
5. Cap. Mort. after Calcination			29
6. Fixed Salt			4

The critical Evacuations by Sweat, Urine, and Spit, continuing on the 23d and 24th Days, my Patient was past all Danger; she slept quietly, and only complained of great Laffitude and Faintness: But as the Urine on these two Days continued to be very turbid and thick, I was invited to pursue my Enquiry, and from eight Ounces procured,

	Ounc.	Dr.	Gr.
1. Lymph	7	4	5
2. Volatile Salt		1	15
3. Oil			56
4. Cap. Mort. before Calcination			58
5. Cap. Mort. after Calcination			26
6. Fixed Salt			3

The Oil and latter Part of the Phlegm, or Spirit, which came over in this Process, being left in the Recipient all Night, I found next Morning several large and beautiful Crystals shot from them, some of which were as large, and much resembled the Crystal Stones used for Mourning Rings.

From these five last Experiments we may plainly observe, that the Urine became more and more impregnated with saline and sulphureous Parts, in Proportion to the Abatement of the bad Symptoms; till at the Crisis it contained more than double the Quantity it did at first. Hence the several Organs of the Body were vastly relieved, their Tension was abated, the Blood grew polite and smooth, and the Cohesion between the several Orders of Blood Globules became less and less, by a constant Diminution of the Quantity of strongly attracting, acrid, irritating, saline and sulphureous Particles.

EXPERIMENT VIII.

A young Man on the sixth Day of an acute Fever, made exceeding limpid, clear, and pale Urine, which was soon followed with a Phrenzy, Subsultus Tendinum, and other dangerous Symptoms. From eight Ounces of this Urine I obtained

	Ounc.	Dr.	Gr.
1. Lymph	7	5	48
2. Volatile Salt			12
3. Oil			19
4. Cap. Mort. before Calcination			44
5. Cap. Mort. after Calcination			23
6. Fixed Salt			2½

It is an old Observation, founded on Experience, that if the Urine changes suddenly from a deeper Colour to a crude Paleness, without a Sediment, towards the Height of a Fever, it is the Fore-runner of some fatal Metastasis, as of Deliria, Convulsions, and the like. And here, in this Experiment, we have plain Demonstration of the Cause of it; because the animal Salts or Oils are not determined to the Bladder, along with the Urine, but are accumulated in the Blood and Lymph, and generate Obstructions.

EXPERIMENT IX.

On the tenth Day the Urine of this young Man grew exceedingly turbid, with an even white Hypostasis at the Bottom, and all the bad Symptoms vanished. Eight Ounces of this Urine afforded,

	Ounc.	Dr.	Gr.
1. Lymph	7	3	33
2. Volatile Salt		1	45
3. Oil		1	6
4. Cap. Mort. before Calcination			48
5. Cap. Mort. after Calcination			22
6. Fixed Salt			6

Here again we have manifest Proof of what vast Advantage it is to the animal Oeconomy, to have the Salts and Oils properly attenuated, diluted, and drained off from the Blood, by the secreting Tubuli of the Kidneys.

Thus, in the most natural Way of analysing the Urine, without Fermentation or Putrefaction, or without the Addition of any suspicious Analyser, we have separated the several constitutive Parts of Urine; whereby we have evidently demonstrated, that the Urine in Fevers abounds more with saline and sulphureous Particles than it does in Health; and especially towards the Crisis, when the Salts and Oils are sufficiently attenuated, ground, and comminuted, it is loaded with a Multitude of Contents, which gives great Relief to

RES

the Sick: But when it is pellucid, pale and clear, and continues so for some Time, it is a very dangerous Phenomenon, and requires the utmost Skill and Diligence to remove it. I shall only add, that the fixed Salt in all these Experiments, appeared, by the strictest Trials with Oil of Vitriol, and a Solution of Silver, to be Sea-Salt.

RENOVATIO. Renovation, in Chemistry, is defined, the Restoration of a mineral Body to a perfect State, from one which is imperfect. It is also used, with respect to the Body, in the same Sense.

RENUANS MUSCULUS. A Name for the *Rectus Anticus Brevis*.

RENUNCIATIO. Renunciation; that is the Report of a Physician or Surgeon to a Magistrate upon an Inquest, with respect to the Event of a Wound, or Poison, or relative to contagious Distempers.

REPANDATIO. The same as LORDOSIS.

REPELLENTIA. Repellent Medicines. See INFLAMMATIO.

REPERCUTIENTIA. The same as REPELLENTIA.

REPLETIO. Repletion, Satiety, or a *Plethora*.

REPOSITIO. The Reduction of a luxated, or fractur'd Limb.

REPRIMENTIA. Remedies which repel by their Astringency.

REPULSORIA. The same as REPELLENTIA.

REPURGATIO. The same as ANACATHARSIS.

RES NATURALES. The Naturals.

In every Person, says *Boerhaave*, however disordered, Life, the Cause of Life, and its Effects, remain in some Degree. These, says he, are called the Naturals, or Things according to Nature, and sometimes simply Nature.

RES NON NATURALES. See CAUSA.

RES PRÆTER NATURAM. Diseases, their Causes, and Symptoms, or Effects, are thus called by the Writers of Institutes.

RESEDA.

The Characters are;

The Leaves are pinnated; it hath a polypetalous anomalous Flower, composed of several dissimilar Petals, out of whose Cup arises the Pointal, which afterwards becomes a membranaceous Fruit, for the most Part three or four corner'd, oblong, and as it were cylindraceous, pregnant with roundish Seeds.

Boerhaave mentions six Species of this Plant; which are;

1. Reseda; maxima. *C. B. P.* 100.

2. Reseda; alba. *J. B.* 3. 467.

3. Reseda; vulgaris. *C. B. P.* 100. *Raii Hist.* 2. 1053. *Synop.* 3. 366. *Tourn. Inst.* 423. *Boerb. Ind. A.* 251. *Reseda*, *Offic. Reseda Plinii*, *Ger.* 226. *Emac.* 277. *Reseda lutea*, *J. B.* 3. 467. *Reseda minor seu vulgaris*, *Park. Theat.* 823. **BASE ROCKET.**

It grows in chalky Soils, and flowers in June and July. The Herb is said to mitigate Pains, and discuss Inflammations.

4. Reseda; minor; vulgaris. *Tourn. Inst.* 423. *Boerb. Ind. A.* 251. *Phyteuma*, *Offic. J. B.* 3. 386. *Raii Hist.* 2. 1054. *Reseda affinis Phyteuma dicta*, *C. B. P.* 100. *Reseda affinis Phyteuma Monspelienfium dicta*, *Park. Theat.* 822. *Valeriana septima*, *Ger.* 918. *Emac.* 1076. **SMALL BASE ROCKET.**

This grows about Montpellier, and flowers in the Summer. The Herb is said to increase Venereal Inclinations.

5. Reseda; minor; alba; foliis dentatis. *Barr. Ic.* 588.

6. Reseda; minor; folio inferiori parum, superiori magis inciso; perennis. *Boerb. Ind. Alt. Plant. Vol. 1.*

RESINA. Resin. See CATHARTICA.

Resins consist of Oil and Acid, and accordingly are artificially produced by mixing Spirit of Vitriol with Spirit of Wine, or of Turpentine. They are either solid or liquid, but these differ from one another only in the Proportion of Earth that enters their Composition. *Geoffroy*.

METHOD OF PREPARING RESINS.

Let the Tinctures prepared with Alcohol from fat resinous Vegetables, be first well clarified by standing, then distilled in a Glass Body, with a gentle Fire, till only one Fourth remains behind: The Alcohol thus drawn off, is to be kept for the same Use again. Then pour the thicken'd Tincture into a low Glass, with the Mouth wide enough to admit the Hand; and let this Vessel contain twelve Times the Quantity of fair Water, in Proportion to the thickened Tincture. The Mixture thus will instantly grow thick, white, and soon exhibit yellow Curds, which, fallen to the Bottom, constitute a gross viscous, unctuous, and somewhat transparent Matter; then set the Glass in a Sand Furnace, and draw off the remaining Alcohol by means of an Alembic, continuing the Operation

Operations so long as the Veins in the Head shew any Spirit to rise, and add this Spirit to the former. At the Bottom there will remain the Water, with the abovemention'd Matter below it. This Matter liquifies in hot Weather, but grows hard in the Cold. The Water being thrown away, tho' it still retains some Odour or Taste, tho' but little Virtue, let the resinous Matter collect and unite into a Mass at the Bottom. It will first be flexible, soft, and, when touch'd, stick incommodiously to the Fingers; but when washed for some Time in several Waters, it begins to cool and harden, and when dried, appears a hard, brittle, transparent Body, that will run with Heat, dissolve in Oil and Alcohol, but not in Water, and burn in the Fire like Oil. This Matter is called by the Chymists Rosin; and requires to be kept in a cool dry Place, and in a close dry Vessel.

This Rosin may be thus prepared from almost any oily, ponderous, dry and resinous Parts of Vegetables. Nature often produces the like from Vegetables, but no where more perfect than in the Camphire Tree, which yields a pure, white, transparent, highly odorous, volatile Rosin, tho' hard to grind: And next to this is Benjamin, which is also a pure volatile Rosin, copiously afforded by the Tree. But when pure Alcohol acts upon resinous Plants, whilst yet green and juicy, the Water abounding in these Juices mixes with the Alcohol, and dilutes it; whence it acts like common rectified Spirit, or rectified Spirit of Wine, in Proportion as the Plant contained more or less Water; and thus its Action becomes different.

R E M A R K S.

This Experiment, which is considerably general, shews the Nature of Rosin, which in the Plant seems to be a pure thin Oil. And hence Chymists are taught under what various physical Forms Oils may subsist, in respect of Heat and Cold; for the Rosin, which in a certain Degree of Cold is hard and brittle, soon resolves by Heat into a pure fluid Oil. Some have supposed that Rosins are generated, whenever any strong Acid is mixed with a clear Oil, upon observing that the strong and fiery Spirits of Nitre and Vitriol turn with Oils into a pitchy Mass, which, when farther perfected by the Fire, becomes a true Rosin; and therefore that the Sulphur thus produced is a true Rosin of the Earth. But there is Room to doubt whether the Coagulation of the Oil proceeds from the Acid, because by the natural Conversion of Balsams into Rosins, the Acid is always more separated from the Balsam, the more the Balsam, which was first liquid, grows thick and hard; and at last there is less Acid found in the Rosin, than in the more fluid Mass; and even the Rosins, which are thus said to be produced by a Mixture of Acid and Oil, yet always differ from those prepared by Nature, or by the Means of Alcohol. These Rosins soon dissolve in Alcohol, but Sulphur never.

The Rosins, thus prepared, manifest their oily Nature by being totally inflammable, and seem to contain their former presiding Spirit; for the Smell, Taste, and particular Virtue of the Subject are always found in the Rosin, though this is to be understood only so far as they remained in the oily Part of the Plant. Hence these Virtues are long retained and preserved for Years, in the viscous Substance of the Rosin; whereas they would otherwise be soon lost in the Plant itself. And hence it often happens, that the Rosins taken in the Body pass through it undivided, by reason of their Tenacity, and without having their Spirits extricated to perform their proper Actions, as not meeting with the Bile, or other saponaceous Fluid, to dissolve and open them; and this is frequently regretted by Physicians, while they direct these Rosins in Form of Pills, which may pass the Body without being dissolved, and without producing the desired Effect. These Rosins, also, generally have a manifest, sharp, caustic, inflammatory, violent Virtue; so that if they stick to the Tongue, or the Jaws, they prove very troublesome by their Acrimony; and this Effect they often have upon the Stomach and Intestines, and thus they may prove mischievous, by stimulating and inflaming. And thus the Rosins of Coloquintida, Euphorbium, Hellebore, Jalap, Scammony, and the like, sometimes occasion violent and dangerous Purgings, that cannot easily be stopt. In order to prevent both these ill Effects, it has been found proper to grind them in a Glass Mortar, for a considerable Time, with an equal Quantity of dry Sugar; so as thus to prepare a fine Powder, which being afterwards mixed and taken in any Syrup, never passes the Stomach undissolved, nor sticks in the Folds of the Intestines, but proves an excellent and expeditious Kind of Purge. So likewise, if mixed with a little Yolk of Egg, this will dissolve their Tenacity, and promote and increase their Efficacy; and when thus treated, these Rosins will also prove purgative, which are obtained from Simples not purgative themselves, as we see in the Rosin of Guaiacum.

Some of the greatest Artists have observed, that the proper distilled aromatic Oils, abounding with their own Spirits, grow resinous, as often as they are deprived thereof. And this is certainly found in some Oils; for if pure Oil of Cinnamon be dissolved in Alcohol, and the Alcohol be with a gentle Fire drawn over from it by Distillation, it carries over the Spirit with it, and leaves the Oil behind deprived thereof and resinous. But as the purging Virtues of certain Plants partly reside in that resinous Matter, which Alcohol extracts; and partly in another active Part of the Plant, which dissolves in Water, as appears in Jalap; the Remainder of such a Plant, after the pure Alcohol has extracted all the Resin, will afford another Part by being boiled in Water. And if this Decoction be strained, inspissated with a gentle Fire to the Consistence of an Extract, and afterwards mixed along with the Resin dissolved in the Yolk of an Egg, there will thus be obtained an excellent Composition, containing almost the whole medicinal Virtue in a little Compass.

RESINA JALAPII. See JALAPA.

RESINA SCAMMONIL. See SCAMMONIUM.

RESINATUM VINUM. Wine impregnated with Resin of the Pitch-Tree. It is mentioned by *Celsus*, L. 2. C. 24. as good for the Stomach. *Dioscorides*, L. 2. C. 43. informs us it was generally made in *Galatia*, where the Wines were subject to grow sower, without this Precaution, because the Climate was too cold to ripen the Grapes.

RESINOCERUM. A Mixture of Resin and Wax.

RESOLVENTIA. Resolvent Medicines. See FIBRA and INFLAMMATIO.

RESOLUTIO. Resolution. See FIBRA and INFLAMMATIO.

RESOLUTIVUS. Resolutive, a modern Epithet for that Species of Fermentation, which tends to the Resolution of Bodies. *Castellus* from *Stahl*.

RESONITUS. A Contrafissure. See CAPUT.

RESORBENTIA. The same as ABSORBENTIA.

RESPIRATIO. Respiration. See PULMONES.

What Respiration is, and why it is uninterruptedly carried on without the Concurrence of the Mind, will appear from what follows. Tho' no Action seems to be more frequent than Respiration, yet it is not to be understood without considerable Difficulty, not only because it is partly vital and partly voluntary; but also because an incredible Number of Organs are subservient to it; for which Reason its Nature is carefully to be investigated, which is most commodiously done by considering the Phenomena with which it is accompanied, and the Organs employed in carrying it on.

The Lungs suspended in the Air, which every where acts upon them, and equally presses them, always collapse, contract themselves into a smaller Space, and become much less than when they remained in the entire Thorax, as is sufficiently evinced by Anatomy: This is principally perform'd by the contractile Force of the muscular Fibres, which connect the squamous Segments of the Bronchia.

If the Lungs thus contracted are filled with Air, forcibly blown through the Glottis, they are so distended as in Bulk not only to equal that which they had in the entire Thorax, but even much to exceed it, as is sufficiently certain from Experience.

The same Thing happens, if when an Access for the Air thro' the Glottis, is left to the Lungs, the Air externally acting on the Lungs is either removed, or its Pressure diminish'd. This may be demonstrated by Experiments made in the Air-Pump.

Hence 'tis obvious, that the Lungs by their proper Force have always a Tendency to become less in all their Parts, than they are when placed in the entire Thorax. For this reason 'tis certain, that they are in a continual State of Distraction, so long as a Person is alive, so that they must collapse, and be diminished, whilst the whole of the Animal remains in a Vacuum, obtain'd by an Exhaustion of the Air in an Air-Pump.

For there is nothing similar to a circumambient Air between the external Membrane of the Lungs, and all the internal Surface of the Pleura, in a sound Person; nothing therefore externally compresses the Lungs, except the Diaphragm. There is, however, always an internal Air contained in them, and freely conveyed to them through the Glottis. Hence the Lungs are always somewhat more distended by the internal Air, than they are compress'd by the external Air, the Access of which is hindered by the Diaphragm, which is so connected with the Ribs and Vertebrae, that the Air cannot enter the Thorax in such a manner as would be requisite for an Equilibrium.

The Truth of this Doctrine, which in accounting for Respiration is of the last Importance, is evidently demonstrated by Anatomy; by the Production and Growth not only of the Fetus in the Uterus, but also of Infants brought into the World;

World; by the Inflation of the Lungs, by Wounds penetrating into the Cavity of the Thorax, occasioning a Collapse of the Lungs, hindering their Dilatation, and inflicted sometimes on one and sometimes on another Side of the Thorax; but most of all by the celebrated Experiment of Mr. *Hook* upon live Dogs.

Since, therefore, in Inspiration, a greater Quantity of Air enters the Lungs through the Glottis, it will extend the Lungs more, and overcome their natural Force; so that in this Action the Lungs are passive, but how far they are active is only to be discover'd from certain Phenomena.

In vital Inspiration then, especially considered in a sleeping Person, first, the Ribs, especially the nine superior ones, articulated at the Vertebrae, and by Cartilages join'd to the Sternum, with their arched Part rise so to the Clavicles, that this Motion is principally observ'd in the Middle of the Arch. Whilst three or, perhaps, four of the inferior Ribs are turned downwards, backwards, and obliquely outwards; but in such a Manner that the seventh, eighth, ninth and tenth Ribs are by their cartilaginous Segments, as it were, drawn inwards. Secondly, the whole Abdomen, to the very End of Inspiration, is gradually rendered more tumid, and press'd outwards. Thirdly, at the same Time the Cavity of the Thorax is enlarged, as is obvious by measuring with a Cord, by viewing it with the Eye, and especially by a mechanical Consideration of the Figure, Situation, Connection, and Articulation of the Ribs here placed, according to the Rules of most perfect and consummate Art, as *Borelli* has excellently demonstrated.

But during this Action the Diaphragm is drawn downwards from the convex and sinuous Situation it was in before, and assumes a plainer Figure, as is obvious from dissecting live Animals, and from large abdominal Wounds inflicted on Man. But that this Change of Figure in the Diaphragm depends upon the Contraction of its muscular Fabric, is sufficiently obvious from an anatomical Consideration of it.

Since, therefore, in Inspiration no other Things happen, its Cause must be determined by these; namely, the above-described Motions of the Ribs and Diaphragm: For which Reason, we must enquire into the Causes which produce these Motions.

The ten superior Ribs, being bonny, arched, incurvated, and more depressed and flat in the Middle than in their rising Extremities, are by two Apophyses fortified with a Cartilage, articulated, first, into the cartilaginous Pit of the Vertebra, imprinted laterally and backwards on the united Bodies, or only in the Body of the first Vertebra; secondly, in the cartilaginous Sinus imprinted on the transverse Process of the Vertebrae. The seven superior Ribs are join'd to the Sternum, by the Interposition of an arch'd, cartilaginous, and pretty elastic Segment; which in the first Rib forms an acute Angle upwards, in the second Rib an Angle almost right, and in the other five Ribs an obtuse Angle with the Sternum. So that the Angle here form'd by the Cartilages of the Ribs, with the Sternum, is the more obtuse the more inferior the Rib is; or that Segment ascending enters the lateral Cavities of the Sternum so that the more superior the Rib is, the smaller the Angle of this Insertion is from the Concourse of the superior Part of the Sternum. But the sixth, seventh and eighth Ribs join their cartilaginous Arches, not only in their uniting Extremities, which reach to the lowest Part of the Sternum, but they also coalesce by mixing broad cartilaginous Processes with each other. The two and sometimes the three inferior Ribs being only furnish'd with one posterior Apophysis, are only articulated to one Sinus in the Body of its own particular Vertebra; and their Cartilages being almost only tendinous, they do not touch the Sternum, but are inserted in the Diaphragm and Cartilages of the next Ribs. So that they seem to be subservient to directing, equally sustaining, and performing the Motions of the Diaphragm, backwards and downwards.

The external intercostal Muscles, arising from the inferior Margin of the superior Rib, descend obliquely forward, and are inserted in the superior Margin of the Rib next to it below, through all the bonny Circumference, between all the Ribs both true and spurious. But the internal intercostal Muscles, arising from the inferior Margin of the superior Rib at a Distance from the Sides of the Spine of the Thorax, and descending obliquely backwards, intersect the former, and are inserted in the superior Margin of the next Rib below, thro' all the bonny Circumference.

But the subclavian Muscle arises fleshy from half the inferior Part of the Clavicle, where the Spine is joined to the Scapula, and going on in a forward Direction, is inserted in the superior Margin of the first Rib near the Sternum.

If, therefore, all these Muscles are contracted at once, then the first Rib is sufficiently fixed by its own Articulation, whilst, by the Force of the Subclavian, the nine following Ribs are elevated and turn'd outwards, especially in the Middles of

their Arches, yet so as to remain in an equable Parallellism, and depress the cartilaginous Segments. Thus the Cavity of the Thorax is remarkably increased.

The Diaphragm already described, when contracted, becomes plain, greatly dilates the Thorax, contracts the Abdomen, draws the anterior Cartilages of the spurious Ribs inwards towards the Vertebrae, draws the two inferior spurious Ribs downwards, and distends and overcomes the Force of the abdominal Muscles.

And these Muscles alone seem to perform vital Inspiration; the intercostal Muscles receiving Nerves from the dorsal Nerves, and the Diaphragm from the vertebral, diaphragmatic, and intercostal Nerves.

When, therefore, the Cavity of the Thorax is increased between the Pleura and Surface of the Lungs, nothing presses the Lungs; so that the Air which enters them through the Glottis, inflates them till they again are, or rather remain, contiguous to the Pleura and Diaphragm; and by this means produces all the Effects already mentioned.

Whilst the Parts remain in this Situation, the Air acts upon the Lungs with a Force equal to that with which the Thorax resists; so that the Lungs will remain in a State of Rest. Hence less Blood will pass through them, and a smaller Quantity of it be forc'd into the Left Ventricle of the Heart, and consequently less Blood will be convey'd to the Cerebellum and its Nerves. The arterial Blood will also act less on the intercostal Muscles and Diaphragm; so that the Causes dilating the Thorax are weaken'd. Hence the Elasticity of the cartilaginous Segments again depresses the Ribs, in which Work they are also assisted by the muscular Fibres, arising from the Side of the Sternum within the Thorax, and inserted into the bonny Extremities and Cartilages of the true Ribs. At the same Time the distracted Fibres of the Peritonæum and abdominal Muscles restore themselves. Hence the compressed Viscera thrust the relaxed Diaphragm upwards into the Thorax, which is by this Means contracted, and the Air expelled from the Lungs. By this Means Expiration and the Actions already mentioned are perform'd. But in a particular manner, by these two Actions the Blood is not only carried through the Lungs, but its Motion accelerated.

At the same Time the Blood being again accelerated, begins to flow more strongly and copiously to the Cerebellum and Muscles, so that the Causes contracting the intercostal Muscles and Diaphragm are renew'd, Inspiration is restor'd, and thus the genuine, present, and effectual Cause of this alternate vital Motion is assign'd.

But besides these Causes of Respiration, there are also others subservient to the Will, and applied to the Ribs for the violent Dilatation of the Breast, and its Contraction. Tho' the former are subservient to the other Functions, yet they also concur to this, since they are naturally form'd for it; for first, the first Scalenus arising fleshy from the anterior Part of the transverse Process of the second, third and fourth Vertebrae of the Neck, and descending obliquely forwards, is by its Tendon inserted in the first Rib. Then the other Scalenus, arising fleshy from the lateral Part of the transverse Process of the second, third and fourth Vertebrae of the Neck, and descending tendinous above the first, is inserted in the second or third Rib. Then the third Scalenus arising fleshy from the anterior lateral Part of the transverse Process of the second, third, fourth, fifth and sixth Vertebrae of the Neck, is inserted for the most Part into the first Rib; for by means of these Muscles the three superior Ribs are elevated, sustained and supported, lest the Action of the intercostal and other Muscles should be determin'd downwards in strong Inspiration. Nor is it any Objection, that by their Action the Neck is bended or turn'd about; because if they act at the same Time, and if the Neck is fixed by its erecting Muscles, which are the Spinalis Colli, the Transversalis Colli, the Inter spinalis Colli, the Longissimus Dorsi, and the Semispinatus, acting at the same Time, and fixing the Neck; the Action of the Scalenus necessarily elevates the Ribs. But in very violent Respiration, 'tis certain that many such Things concur. Fourthly, the Serratus Anticus Minor arising fleshy from the Caracoid Process, descending obliquely forwards, becoming larger, and then smaller, is inserted fleshy in the anterior bonny Parts of the second, third, fourth, and fifth Ribs. Fifthly, the Serratus Anticus Major arising fleshy, large, and thick from the Basis of the Scapula, and descending obliquely forwards, is, as it were, by notch'd fleshy Portions, inserted into the eight superior Ribs; the two, three, four, or five inferior of which are indented with similar Portions of the Obliquus Exterior Abdominalis. For if the Muscles of the Scapula, the Trapezius, the Rhomboides, and the Levator, fix the Scapula immovable upwards and backwards; then the Action of both the Serrati strongly elevates the Ribs from the second to the eighth, which we observe to happen in the strongest Inspiration. Sixthly, in the posterior Part, the Serratus Posterior,

Superior, arising tendinous from the Spines of the two inferior Vertebrae of the Neck; and the three Superior of the Thorax, is by fleshy Denticulations inserted into the Curvature of the second, third and fourth Ribs, which it raises upwards. Seventhly, Respiration is also assisted by the Serratus Pecticus Inferior, which arising from the Spines of the lumbar Vertebrae, and sometimes from some of the thoracic Vertebrae, is with digitated Fibres inserted almost in the Middle Arch of the ninth, tenth, eleventh, and the Extremity of the twelfth Rib; for this Muscle, by the Descent of its Fibres, almost from the horizontal ascendant Muscle, and by drawing these last Ribs outwards, downwards and backwards, enlarges the Thorax, and prevents its Coarctation by an Approach of these Ribs, in consequence of the Contraction of the Fibres of the Diaphragm.

But if the Action of the Musculus Obliquus exterior, and of the Musculus Rectus acting in Concert, depressing the Ribs, contracting the Thorax, and resisting the Serratus Inferior Anticus, as is obvious from their Connection, concurs with the Action of the Sacro-lumbaris, which is a highly compound Muscle, hardly capable of being distinctly describ'd. It consists of a Series of muscular fleshy Fibres, arising from the transverse Processes of the Lumbar Vertebrae, and their Spines, and such as ascend upwards, and are there join'd to the fleshy Musculi accessorii, which proceed from the Ribs: This Action, I say, strongly assists a violent Expiration, the Abdomen being at the same Time contracted by Means of the *Musculus Transversus*.

In Women the Sternum is more compress'd, the Clavicles more streight, the Thorax narrower, and its anterior Part flatter, and the Superior cartilaginous Segments sooner become bonny, than the inferior. Hence in Inspiration their Sternum is turn'd upwards and obliquely outwards, and the whole Thorax as it were rises. Hence also they respire most freely whilst their Abdomen is tumid.

'Tis certain that those Muscles which are subservient to Respiration, and at the same Time under the Influence of the Will, are far larger and stronger than those which necessarily perform vital Respiration. Hence it is, that the Force of the former is capable of augmenting, diminishing, and of totally stopping both Inspiration and Expiration.

Hence we may conceive, that there are not two Moments in the Life of Man immediately succeeding each other, in which the Pulmonary Vessels retain the same Figure, Largeness and Action.

As also, that here some Muscles have what we may call an Antagonism without an Antagonist-Muscle.

Hence also we understand the Antagonism between the Action of the Fluid which moves the Muscles, and the Resistance of the simple Elasticity in the Solids.

That in order to alternate Motions in Parts to act reciprocally, it is not necessary to suppose alternate Actions of the Humours, since it is sufficient that they act in either.

The Will is capable of stopping the Force and Cause of Respiration, tho' not of directly stopping the Force of the Heart; so that the Cause of Motion in the Heart, is stronger and more constant, and its Action more frequent: There is, however, a kind of Consent between the Pulsations of the Heart, and the Number of Respirations; tho' it is hard to account for such a Consent.

Hence we perceive the Necessity of reiterated Pulsations of the Heart, in order to the Repetition of Respiration. But how long these may stop, without destroying Life, is hard to determine.

Hence also we understand, why in an asthmatic Paroxysm, a Peripneumony, a Difficulty of Breathing, and in the Agonies of Death, Respiration is performed by the vital Muscles, whilst those under the Direction of the Will greatly contribute to it: So that the Neck, Scapulae, Breast, inferior Ribs and Back, are evidently moved.

Why in perfect Health, when the Body is at Rest, and the Person awake, Respiration is so slow and still, that it is hardly perceptible, and at the same time the Circulation of the Humours brisk.

Why in Coughing and Sighing, the Respiration being accelerated, the Motion of the Blood through all the Vessels is increased.

Why the first Action of Respiration is Inspiration, and the last Expiration.

Why when in Diseases the Respiration ceases long, the venous Sinuses, the Auricles, and the Heart itself, palpitate.

And why it is, that an Air which is highly heavy, light, moist, dry, hot, or cold, compressed or rarified; as also that which being pent up in a small Space, is not soon renewed, is absolutely unfit for performing Respiration, and continuing Life. *Boerhaave Institut.*

OF PROGNOSTICS FROM A GOOD AND BAD RESPIRATION.

That a free and regular Respiration, according to Nature, is always of great Moment towards predicting the Recovery of the Patient, is, I believe, universally acknowledged. *Hippocrates*, in his Book of *Prognostics*, tells us, "That a Facility of Respiration has a great Influence towards a Recovery in all acute Diseases, which come to a Crisis in forty Days." And he had very good Grounds for so pronouncing, when, as *Galen* says in his Commentary on the Place, "A good Respiration shews that the Thorax, Heart, Lungs, Diaphragm, Pleura, and, in short, all the Parts contributing to Respiration, are in a sound State; for it is impossible for any of the Organs subservient to Respiration to be injured, and the Patient at the same time to breathe in a free and natural manner." And therefore the same Author, *Lib. I. de Cris.* among other Signs, justly reckons a good Respiration. But that we may with Certainty prognosticate a good Event, there are two other Signs to be also regarded, which are, a strong Pulse, and a right Disposition of the Sick, with respect to such Things as are offered for his Sustenance; for these three Signs observed at the same time, that is to say, a just and natural Respiration, a right Disposition of the Patient with regard to Meat and Drink, and a Pulse sufficiently strong, are Indications of great Importance toward prognosticating a good Issue to the Disease, as *Galen* in 3 *Epid.* observes; and they have frequently proved salutary Indications in those who have been regarded as dying Persons. A due Respiration, therefore, in all acute Diseases, is good, and the contrary bad, as it indicates an Indisposition of some Organ belonging to Respiration. This last Sign, however, is of itself no sufficient Indication of a fatal Event, but only in Conjunction with other mortal Prognostics; in which Circumstance, it is a most fatal Indication, when attended with an Abhorrence of Food, a very dry and parched Tongue, and yet no Thirst, Excrements of the worst kind, and a very weak and low Pulse; and the Physician may, in such a Case, confidently predict the Death of the Patient. A bad Respiration then is always a bad Sign, though it be not always mortal in acute Diseases; but it is always very bad, when attended with another very bad Sign, and much more so, if attended with many such Signs. Of such a Respiration *Hippocrates* speaks, 11 *Aphor.* 50. where he says, "In a Fever not intermittent, a Dyspnoea, attended with a Delirium, is mortal."

If it be asked, what are these bad Respirations? we answer, they are the great rare Respiration, and the small frequent one, which, in dying Persons, *Hippocrates* usually calls *βραχύπνοια*, *Brachypnoia*, [See *BRACHYPNOEA*.] a small, slender, weak, diminished Breathing. Those Respirations are also very bad, which are performed with a Sound of the Thorax, like that of Persons on the Point of Suffocation by Drowning, being obscure, stertorous, and interrupted. Of such we find *Hippocrates* speaking, 11 *Aphor.* 67. "In Fevers, says he, the Breath striking with a Noise in its Passage [*τὸ πνεῦμα πρὸς κτύπον*, See *PNEUMA*] is bad; for it indicates a Convulsion." By this striking or impinging Breath, *Galen*, in his Comment on that *Aphorism*, understands one which is interrupted in the Middle, and stops. A sobbing kind of Respiration [*καυὸν καὶ αἰσπνοῖαι*] is also very bad, as we are taught by *Hippocrates*, 6 *Aphor.* 54. But the worst of all Respiration, and such as is observed in dying Persons, are the cold, as when the Breath is expired cold from the Mouth and Nostrils. Next to these, are those we find mentioned, *Coac.* 260. with the Epithets, *extended, urgent, and obscure*, [*ἐκτετακτοῦ, καὶ κατεπύγνου, καὶ ἀμαυροῦ*] where they are pronounced very bad, and Signs of approaching Death. By the first of these, we are to understand the same with the *sublime* or *apparent*, [See *PNEUMA*.] in which the Breast, and sometimes the Scapulae, are distended, and the Lobes, or Pinnae, of the Nostrils, are moved; but what is inspired, is so little as to be scarce perceptible to Sense, and yet the Inspiration is very quick and frequent, on account of the extreme Urgency of the Heat, which gives Occasion for the two other Epithets of *obscure*, and *urgent*, or *hasty*. These then are the several Kinds of bad Respiration; and we shall now treat of the Prognostics, which may be drawn from them separately.

A great and quick Respiration, tho' it indicates a Redundance of fuliginous Excrements in the Body, according to *Galen*, *de Difficult. Resp.* *Lib. I. Cap.* 20. yet it shews us, he says, the Soundness and Integrity of the Faculty; and that none of the Organs serving to Respiration is injured; for their Greatness, or Fulness, and Quickness of Respiration, is occasioned by the Necessities of Nature, when there is a Promptitude of the Organs, and an entire Soundness of the Faculty. A great or full Respiration, and at the same time slow, or at long

long Intervals, shews a Delirium; and a small and quick Respiration indicates a Collection of fuliginous Excrement, or a Pain in some Part which is moved by Respiration, or, as *Hippocrates* says, in his *Prognostics*, an Inflammation of the Parts above the Diaphragm. A small and slow Respiration, as *Galen* observes, in his *Comment* on the Case of *Pythion*, 3 *Epid. Sect. 3. Aigr. 3.* where there is no Collection of fuliginous Excrement, indicates a Pain of some Organ subservient to Respiration, or else an Inflammation of some neighbouring Part. These two last Differences of Respiration, with bad Signs, are more to be dreaded than the two former, as they indicate a great Weakness or Decay of the Faculty, or at least a Pain in some Part which moves the Thorax. Upon the whole then, a great and quick Respiration is a Sign of much Heat, and a Redundance of fuliginous Excrement, but attended with a Soundness and Strength of the Faculty. A great, and at the same time a slow Respiration, is better than the former, as it approaches nearer to a sound and healthy State, and is an Indication of the Soundness of the Faculty without much Heat, and without fumes Excrements. All these are to be regarded by the Physician, in Conjunction with other Signs and Prognostics, to be formed from them altogether. But we proceed to speak of Respirations which are both great and dense, and, on the contrary, of great and rare Respirations, the Knowledge of which will afford us many Prognostics, for predicting the Fate of the Patient.

A great, and at the same time dense Respiration, is, when Inspiration is great and full, and Expiration hot and fervent through the Mouth and Nostrils. And this happens, as we read in the *Prognostics*, from a Pain or Inflammation affecting some Organ subservient to Respiration, or a Part of the Thorax; for Instance, the Heart, Diaphragm, Lungs, Pleura, or Muscles of the Thorax; for if these Parts be pained or inflamed for Want of a due Dilatation, a Density of Respiration must of necessity be the Consequence: Such a Symptom, however, indicates a Strength of the Faculty, which gives great Hopes of a Recovery. A great and rare [*ἀραια*, as when the Breath is long in drawing, in opposition to *denſe*, *πυκνὴ*] Respiration in acute Fevers, indicates a Delirium, according to the *Prognostics*. But what are we to understand by a great Respiration? Is it where there is a great Dilatation of the Thorax? By no means; for in those who are affected with a Tumor, or a Straitness of the Organs of Respiration, without any flameous Heat, there is a very great Dilatation of the Thorax, but Inspiration is but small; we say, therefore, that a great Respiration is so called on account of the great Quantity of inspired Air, and expired fuliginous Particles; and this seems to be expressly the Sense of *Hippocrates*, in those Words, *μῆλα δ' ἀναπνέοντες* [*πνέμα*] which must be understood of the great Quantity of Breath in Respiration, and not of the Dilatation of the Thorax. To this it may be added, by way of Confirmation, that among the Differences of Respiration, what they call the sublime and apparent one, tho' attended with a very remarkable Dilatation of the Thorax, is yet but small and slender, as appears from *Galen*.

But why is a great and rare Spirit an Indication of a Delirium? *Galen*, *Lib. 2. de Difficult. Resp.* has demonstrated the Truth of this Observation at large; but then it does not follow, that all delirious Persons should breathe after this manner; for a Delirium may be attended with a Straitness of the Breast, or a Pain, or a Decay of Strength; all which occasion a small and rare Respiration. All, however, who labour under this Symptom of great and rare Respiration, are certainly delirious, as was particularly observed by *Hippocrates* of *Philiscus*, *Silenus*, the Wife of *Dromedus*, and others. As to Prognostics, from this kind of Respiration, they are always of Importance, because a Delirium is always bad, though not mortal, except when it is attended with other bad and mortal Signs, as it was in the Cases of *Philiscus*, *Silenus*, the Wife of *Dromedus*, and the phrenetic young Man of *Melibæa*. Of *Philiscus*, 1 *Epid. Aigr. 1.* it is said that his Breath was constantly *ὡς πρὶς ἀνακαλυψήν, ἀραιὴν, μῆλα*, “as if it were” “revoked inwards, rare, great, [See *PNEUMA*] his Spleen” “was elevated into a round Tumor; he was always in a cold” “Sweat, and he had Exacerbations on even Days.” In this Sense, cold Sweats were one fatal concomitant Sign. *Silenus*, *Aigr. 2.* “had, from the Beginning to the End, a great and” “rare Respiration, accompanied with a continual Palpitation” “of the Hypochondrium,” which at length proved mortal; for in the Beginning he made black Urine, which deposited a black Sediment, was delirious, and had pinguious Stools. On the sixth Day he sweated a little above his Heart, and his extreme Parts were cold and livid, with other Symptoms, which in Conjunction with his great and rare Respiration, were more than sufficient Indications, not so much of a Delirium, as of the Fatality of the Disease. Of the Wife of *Dromedus*, *Aigr. 1.* we read, “That on the sixth Day in the Morning,

“she was seized with a Rigor, which was soon succeeded by” “an universal Heat, then by a Sweat all over, and a Coldness of the Extremities, a Delirium, and a great and rare” “Respiration; and a little after she was seized with Convulsions, which began at the Head, and carried her off on a sudden.” The young Man of *Melibæa*, 3 *Epid. Aigr. ult.* “had a rare and great Respiration, and at long Intervals,” “with a softish Tension of the Hypochondrium, of an oblong” “Figure, was continually molested with a Palpitation of the” “Heart, and made Urine like Oil.”

A small Respiration is what *Galen*, *Com. 3. in 3 Epid.* after *Hippocrates*, calls *slender* and *diminished*, [*λεπτὴν καὶ μινυθωδέα*], and also *obscure*, because the Patient can hardly be perceived to breathe. Such a Respiration is always bad, as proceeding from Weakness, and a Decay of the natural Heat; and if this small Respiration be also frequent, it is an Indication, according to *Galen*, of a Pain or Inflammation in some Part above the Diaphragm. But the Author of the *Coac.* 260. says, that a frequent and small Respiration indicates a Pain or Inflammation in the principal Parts. Such a Respiration is very much to be dreaded in acute Diseases; and the more, if it be consequent upon a great Respiration; for it is an Indication either that Nature is very much sunk, as was before observed, or that some principal Part suffers under a Pain or Inflammation, or both together; nothing, however, can, with Certainty, be predicted from this Respiration alone, unless it be confirmed by other Signs; for many under acute Diseases, whose Respiration has been small and frequent, have recover'd. But when it is accompanied with other bad Signs, we have the greatest Reason to be apprehensive of the Event, and most when from frequent it becomes small, as is observed in the last Stage of a Consumption. A frequent, then, or quick, and at the same time a small Respiration, with bad Signs, is mortal, as it was in the Case of the Sister of *Temeneus*, 4 *Epid. T. 28.* who, on the sixteenth Day, was observed to have such a Respiration, and died soon after.

A small, and at the same time rare, or an unfrequent Respiration, is perhaps the worst of all, as it indicates that Nature is oppressed and exhausted to such a Degree, that it must of necessity sink under the Disease; for which Reason it is by Physicians justly called a cold Respiration, as being a Sign of an extreme Degree of Cold, or an Extinction of the natural Heat, agreeably to that of *Galen*, *Com. 3. in 3 Epid.* where he says there is a kind of small and rare or unfrequent Respiration, which, when cold, shews, that the vital Faculty is extinguished. This is confirm'd by *Hippocrates* in his *Prognostics*, where a cold Expiration from the Nostrils is pronounced mortal in a high Degree, as it was for instance, in dying *Pythion*, 3 *Epid. Sect. 3. Aigr. 3.* and others observed by the same Author.

Having made these Remarks on Respirations, and what is indicated and portended by them, we shall proceed to examine in particular those Respirations which are observ'd in dying Persons, of which Nature are the cold, the sublime or apparent, the stertorous, or what is attended with Noise, and sometimes the sobbing and interrupted. Of a cold Respiration, which is the most mortal of all, and never observ'd but in those who are very near Death, *Hippocrates*, 6 *Epid. Sect. 4. Aph. 27.* thus speaks; “Among deadly Signs is to be reckoned a hot Vapour exhaling through the Skin and the Nostrils, when a cold Expiration through the Nostrils has preceded it.” This is better express'd by *Galen* in the following Words: “One of the most mortal Signs is a hot Vapour” “proceeding from the Skin, after a cold Breath discharg'd” “by Expiration; but the Exhalation of a hot Vapour thro'” “the Skin and Nostrils, is not always a sufficient Warrant” “for predicting Death; for, as he says a little after, such a” “Symptom only happens to those who die of a very hot Fever, which having torresfy'd the very Substance of the” “Heart, ends at last in a Refrigeration of the same; the” “vital Faculty then ceasing to act as the Heart dies. Sometimes there is an Eruption of Sweat, as when the Body is” “full of Humours; but when it has been before exhausted and” “dried by the Heat of a violent Fever, a hot Vapour instead of” “Sweat seems to exhale, and offer itself in a sensible manner” “to the Touch.” Hence in *Coac.* 160. “A febrile and fuliginous Respiration is pronounced mortal, tho' in a less Degree than the cold.” Physicians, therefore, usually call these three Signs deadly, which are, a Burning Fever, a cold and rare Respiration, and a hot Vapour from the Skin, which we may sometimes call Sweat, or Moisture, and which in Fevers is a Forerunner of Death.

An obscure Respiration, also, as when the Patient can hardly be known to breathe, is no less mortal than a cold Respiration. An *obscure* Respiration is when hardly any Breath is discharg'd by the Mouth and Nostrils. In this Sense a Respiration may possibly be very obscure, and yet appear very manifest to all, as when the Thorax, Scapulae, and Lobes of the Nostrils

Nostrils are moved, which kind of Respiration Physicians properly call the *sublime* and *apparent*, tho' a very small Quantity of Breath be expired, on which Account it may be very obscure. Of such a Respiration we read, *Coac.* 260. where it is said, "The worst of all Respiration, and what shews Death to be very near, is the extended, urgent, and obscure."

We come next to treat of a stertorous Respiration, or such as is perform'd with a Sound or Noise. A stertorous Respiration is when, in Breathing, there is perceived in the Throat a kind of Ebullition, or Noise, which we call a *Stertor*, or such as Persons make in Snoring. This Word is express'd in *Latin* by the Words *Strepitus*, *Sonus*, and *Ebullitio*; and in *Hippocrates* by *ῥέγγος* (*Rhencos*), *ῥέγγις* (*Rhencis*) and sometimes by *κέγχος* (*Cechnos*). In those who die of acute Distempers this Fervor or rattling Noise in the Throat is generally heard for a little more than a Day before their Decease, and indicates an Extinction of the Faculty, which is become too weak to expel the excrementitious Particles from the Fauces. In others, who labour under Diseases of the Thorax, as a Pleurisy or Peripneumony, this Stertor is occasioned by a Straitness, or a Retention of the Spit, attended with a small Respiration, and oftentimes with an Orthopnoea, the most difficult of Respirations. In almost all dying Persons this Fervor, or Stertor, is perceived a little before their End; but most of all in those who die of Pleurisy, Peripneumonics and Suppurations of the Lungs, who are every one affected with it, for which reason we must pronounce it a mortal Sign. But we are carefully to distinguish here with respect to the Time when this Stertor first comes upon the Patient, as whether it be in the Beginning, or Increase of the Disease; for if it is to be fatal, it never comes but after some other mortal Signs, as it did in the Case of the pleuretic Son of *Antiphanes*, 7 *Epid.* 28. and of *Menon*, another pleuretic Patient, 47. of whom *Hippocrates* says: "On the sixteenth Day his Respiration was stertorous; he had a Sweat about his Neck and Forehead, but seldom about his Breast; his Forehead and extreme Parts were perpetually cold in a moderate Degree. He had a continual Palpitation of the Veins about the Temples; and for some Time before his Death, was affected with a Coma, which held him Night and Day." A stertorous Respiration, therefore, in acute Diseases, is generally pernicious; and when preceded by, or attended with other bad Signs, the most fatal of all Symptoms, as it proved in the Case of *Menon* before-mention'd, who, among other bad Signs, had a Sweat about his Neck and Forehead, which *Hippocrates* in his *Prognostics* pronounces mortal in acute Diseases, and a Coldness of the extreme Parts, one of the worst of Symptoms. But in a Pleurisy, or Peripneumony, and that they call a catarrhus Fever, because consequent or attendant upon a Catarrh, a Stertor is sometimes occasion'd by the Plenty of excrementitious Particles, or a Redundance of the Matter of the Catarrh falling down upon the Breast and Fauces, and is no more a mortal Sign, than it is in an Asthma or Orthopnoea, where the Patients are frequently relieved by an Excretion or Resolution of the Humour. But a mortal Stertor is distinguished from another, in that it not only begins, but increases more and more with the Disease, and is still more and more sensible; for such a Stertor is mortal in the highest Degree, and is attended with all the mortal Signs: Whereas a Stertor, which begins with the Distemper, and in a little Time after, as the Disease increases, either through a plentiful Excretion of Humours by Means of a Cough, or the Consumption of it by the igneous Heat of the Fever, leaves the Patient, is not so much to be dreaded, as occasioned only by a Redundance of Humours, especially if it ceases for some obvious Reason. But a Stertor, which tho' it be occasion'd in the Beginning of a Disease by a copious Catarrh, yet every Day increases, must of Necessity be pernicious, because it is a sure Sign that Nature is so far burden'd and oppress'd with the Multitude of Humours, as to be rendered incapable of making the necessary Excretions, whence a Suffocation is to be apprehended. Thus it was with the Wife of *Polemarchus*, 5 *Epid.* 62. of whom it is said, "That about the fifth Day she had a painful Tumor of the Left Knee, and something seemed to be gather'd about the Region of the Heart, and her Respiration was like that of one on the Point of Suffocation by Submersion, with a rattling Noise in the Breast. On the seventh Day she died." The Son of *Antiphanes* also, 7 *Epid.* T. 28. who was affected with an Empyema, died with a Stertor upon him. To this we may add, that *Hippocrates*, 1 *Prorrh.* 25. tells us, "That under an Aphony, or Loss of Voice, a conspicuous [*πρόφανος*. See *PNEUMA*.] Respiration like that of Persons suffocated, is pernicious." And so much for a stertorous Respiration, called also by some *Regmos* and *Cechnos*.

We come now to consider the sublime or elevated, and apparent Respiration, which also is never observ'd but in dying Persons. Some call this kind of Respiration *sublime*, some

apparent, some *conspicuous*, [*πρόφανος*, *promptum*, readily offering itself to View] and some erroneously a *great* Respiration, because they observe the Thorax very much moved and dilated under it. Persons under this Circumstance, as *Galen Com. in 1 Prorrh.* says, may very properly be said to be strangled, because they want Air. And it is customary with the same Author to call this kind of Respiration *φανώμενος* (*Phanomenon*) "apparent." The Patient in this Case seems in drawing his Breath, to move his whole Scapulæ; so that their Motion appears conspicuously through his Cloths, and the upper Parts of the Thorax seem to labour in the Work. For this reason *Galen* calls it, also, *μείλιον* (*meteoron*) "sublime," because the Patient in such a Case seems to move the higher and more elevated Parts of the Thorax. He gives us also the Causes of this kind of Respiration in what follows. "Such a Respiration, he says, may be owing to a Straitness of the Organs, or to some Disorder in the Origin of the Nerves, which latter *Hippocrates* justly thought might be the Cause of a great Respiration, he had more properly said not a great Respiration, but a great Dilatation of the Thorax, by which some being deceived, have erroneously called it a great Respiration, tho' Expiration in this Case be but small." We may add that *Galen* and *Hippocrates* bestow the Epithet of *sublime*, not only on this kind of Respiration just describ'd, but on that also under which the Lobes of the Nostrils and the Muscles about the Scapulæ are visibly moved, which latter Respiration happens in acute Diseases from an extreme Weakness. *Galen, Com. in 3 Epid.* 24. speaking on this Subject, says, "By those who are said to fetch their Breath by the Extremity of the Nose, [*ἀπὸ τῆς ᾀτης*] are meant those I suppose, who in Respiration move the Lobes of their Nostrils, for we have seen many sick Persons breathe in such a manner as to contract those Parts in Expiration, and dilate them in Inspiration." This is a usual Symptom with those who are suffocated by a Quinsy, Peripneumony, or Suppurations of the Lungs, as well as those who are extremely weak and exhausted, and proceeds from an Obstruction of the Passage for the Breath by an Inflammation of the Aspera Arteria, whence the Patient is under a Necessity of fetching his Breath short, and with all his Thorax, and often strives to raise himself up when just suffocated, and attracts the external Air with all the Remainder of his Strength, and with his whole Thorax; and perhaps this Sort of Respiration was by *Hippocrates* called *sublime*, or elevated (*μείλιον*) because the Patients in such a Circumstance strive to raise themselves. This *sublime* Respiration, then, is usual in Persons labouring under a Quinsy, Peripneumony and Empyema, and for the Reasons assigned.

In other acute Diseases, under which the Patients are not suffocated by the Straitness of the Organs, this Respiration by the Extremity of the Nose has another Cause, of which *Galen, de Diffic. Resp. Lib. 1. Cap. 23.* gives the following Account. "If any one would have the proper Signs of a Disorder in the Faculty of Respiration, or of any Animal Faculty in general, and especially when under a Perfrigeration, he will have for those Signs the Motion of the Lobes of the Nostrils, the Action of all the Muscles about the Scapulæ, and the precipitate Collapsion of the Thorax; for when the Faculty by which Respiration is perform'd, moves with less Vigour than it ought, it is assisted in Inspiration by the Lobes of the Nostrils, which also help towards attracting the external Air, after the same manner as when we would draw in any Thing by the Mouth, we contract the Lips; and thus again in Expiration there is a precipitate Collapsion, and not a gradual Demission of the Thorax." In short, then we may conclude from what has been said, that what we call a *sublime Respiration*, however occasioned, is always mortal, as indicating an extreme Straitness of the Organs of Respiration, by which Nature is in imminent Danger of Suffocation; or else an utter Decay of Strength, and Extinction of the natural Faculties, for which Reason it is never observ'd but in dying Persons. It is, also, never without some other precedent, attendant, or subsequent mortal Symptoms, for this kind of Respiration never appears without some other deadly Sign; whence it is said by the Author of the *Coac.* 260. that "The worst Kind of Respiration, and what shews Death to be just at hand, is the extended, urgent and obscure." We observed that tho' this Sign alone was a sure Prognostic of Death, yet it was always attended with other deadly Signs; as it was, for instance, in the Wife of *Olympiades*, 7 *Epid.* 49. of whom it is said, "That her Eyes were cast down, and that she drew her Breath in the sublime Manner through her Nostrils; that she was ill-coloured; and just before she died, had a Sweat about her Feet and Legs." Such, also, was the Case of dying *Aristocrates*, 52. of whom *Hippocrates* says, "That towards Night his Respiration was sublime, that he had a small Sweat about his Forehead, his lower Parts were cold, and he was restless."

To the other mortal Kinds of Respiration, we add the sobbing, [*κλαυθμός*] but small and rare Respiration, agreeably to the Judgment of *Hippocrates*, 6 *Aph.* 54. "In acute Diseases attended with a Fever, a sobbing Respiration is bad." An interrupted Respiration is no less pernicious, but this perhaps is the same with the former, which Opinion seems to be favour'd by *Galen* in his *Comment* on the before-cited *Aphorism*, where he says that "Children when they cry seem to draw in their Breath for a-while, then to have their Inspiration interrupted, their Thorax standing the mean time unmov'd, and afterwards to draw in a fresh Supply of Breath to what was wanting;—this is occasioned sometimes from a Weariness of the Faculty, sometimes from a Hardness of the Organs, and sometimes from both Causes in Conjunction. It may proceed, also, from a convulsive Disposition of the Muscles of the Breast." But whatever be the Cause, this sobbing and interrupted Respiration in acute Diseases is bad; and if the Strength of the Patient happens at the same time to be very much exhausted, pernicious in the highest Degree. Such a Respiration is also but small and slender, and in acute burning Fevers indicates a Hardness and convulsive Disposition, and is always bad, as well as Convulsions from the same Cause, which is a Dryness of the nervous Parts. Of this Kind of Respiration it is, also, that *Hippocrates* speaks, *Aph.* 67. where he says, "That an impinging or colliding, [*πρὸςπίπτον*, which *Galen* explains by "interrupted"] Respiration is bad; for it indicates Convulsions." And Convulsions excited by Dryness in very hot Diseases are incurable, and consequently in acute Disorders mortal. But that we may rightly form our Prognostics concerning the Event of a Disease, from such Convulsions, we are to consider the Signs which precede, accompany or succeed them; and if none of these Signs are bad, we are to suspend our Judgment of the Fate of the Patient. *Prosper Alpinus de Prasag. Vit. et Mort.* p. 252.

RESSELLA. An obscure Term in *Paracelsus*, which he explains no farther than by telling us, that *Resella* is what removes Heat, and *Affa* what promotes it.

RESTA BOVIS. Rest-Harrow. See *ANONIS*.

RESTINCTIO. *Rulandus* defines Chymical Restinction, A Gradation by which Substances heated red hot, are extinguished in an exalting Liquor, and thus brought to their greatest Perfection.

RESTITUTIO, Restitution, in Surgery, is the Reduction of a luxated or fractur'd Limb.

RESTORATIO. The same as *ANALEPSIS*.

RESUMPTIVA. Restoratives.

RESUSCITATIO. Resuscitation, in Chemistry, is the Restoration of any disguised Body to its original Form.

RETTE MIRABILE. A Congeries of Blood Vessels in the Brain is thus called. See *CEREBRUM*.

RETENTA. Things retain'd in the Body; or which ought to be retain'd in a State of Health.

RETEPORA. A Name for the *Eschara Rondeletii*.

RETICULARIS, or **RETIFORMIS.** Reticular, or like a Net.

RETICULUM. The second Ventricle of a ruminating Animal.

RETINA. The Expansion of the Optic Nerves on the internal Surface of the Eye, is thus called. See *OCULUS*.

The *Retina* is liable to two Sorts of Diseases; the first is a Separation of some Parts of this Membrane from the Choroides. At the Place where this Separation is made, there follows an Elevation or Fold, which stops the Light, and hinders its Passage to that Part of the Choroides, which is cover'd by this Fold; this occasions a sort of a Shade, which the Patients see in the Air. The second Disease of the *Retina* is an Atrophy or Wasting of that Membrane.

The Cause of the first Disease may, with a great Shew of Reason, be thus accounted for, that the Blood Vessels of the *Retina* become varicous; for it is easily conceived, that the Dilatation of these Vessels may separate the *Retina* from the Choroides, in that Part which answers the dilated Vessels. I have always observed this Disease to proceed from a Cold in the Head, after some violent Exercise, or whatever else may have put the Blood into a violent Motion. Hence I infer, that the external Cold, by obstructing the Pores of the Skin, has stop'd the Perspiration of some Part of the Humours rarefied in the Blood Vessels, on the Surface of the *Retina*, which, from the Fineness of its Texture, is damaged by this Inflation, after the above-mention'd manner. I call this Disease a Separation of the *Retina* from the Choroides. As this Membrane fills a considerable Space in the Eye, this Separation is often made in several Places; so that the Signs of this Disease answer to the Number of the Parts separated.

Its Signs are certain Appearances in the Air, more or less distant from the Patient's Eyes. They are a kind of Shadows

of different Figures, modified according to the Size and Form of the Parts of the *Retina*, which is separated.

As to the Prognostic, there is no Danger of losing the Sight in this Disease; it is only troublesome to the Patient. As this Disease begins with the same Signs as a Cataract, one Disorder may be taken for the other; but to prevent the like Mistake, we shall propose the Difference. In a Cataract the Sight shortens and decreases daily; whereas, in the present Disease, the Sight continues the same both in Quickness and Extent.

Though Remedies do not perfectly cure this Disease, and that the Persons once attack'd with it see some of these Shades all their Life their Number and Compass, in Breadth may be still be lessened. The following Remedies are of Service; such are Broths made of Crabs, repeated Purges, Eye-Bright Tea drunk in the Morning, Powder of Vipers, Wood-Lice, and Eye-Bright mixed together.

In an Atrophy of the *Retina*, as the Rays of Light are not sufficiently modified in that Membrane, they make too vivid an Impression on the Choroides, which is very detrimental to it. Hence ensues a confused Vision; so that the Patients, at the first Look, can see very well; but if they continue to read any time, or to look at any shining Object, they feel a sudden Weariness in their Head, and a Dimness in their Sight, which obliges them to close their Eyes; then opening them a Moment after they see, as at the first Look, but for a short Time.

Embroiderers, Stocking-Weavers and Shoemakers are subject to this Disease; the first because the Brightness of the Gold, Silver, and other Colours, damages the Sight by the lively Impression it makes on the Eye; and the Shoemakers, in order to find the Hole made by their Awl, to run the End through it, by this continual Attention fatigue and weaken their Sight so much that they are obliged to quit their Trade. These People can work but a few Days in the Week.

There are some People, though they do not work as these Handicrafts, cannot, however, make use of their Sight a Quarter of an Hour, but their Head is disordered; of those I chiefly treat.

No Remedies cure this Disease. Nothing avails, but rest and little Exercise of the Sight. All those Persons who are employed at fine or shining Work, if they have a mind to continue, must make use of green Spectacles.

RETINACULUM. A Chirurgical Instrument, used in Castration, and the Operation for a *Hernia*, in order to prevent the Intestines from falling into the *Scrotum*.

RETORTA. A Retort; a chymical Vessel with a large Belly, and crooked Neck, resembling a Horn; for which reason the *French* call it *Cornue*.

RETRACTIO. The same as *ANTIPASIS*.

RETRAHENS AURICULAM. The Name of a Muscle called also *Triceps Auris*, because it has sometimes three Beginnings. *M. Du Verney* says it is composed of five or six fleshy Fibres, which have their Origination from the superior and Fore-part of the *Apophysis Mastoidea*, and descend obliquely to their Insertion in the Middle of the *Concha Auriculæ*, *Cæuper*.

RETRANSMUTATIO. When a Substance originally in a fluid, but afterwards in a solid State, is again reduced to a Fluid, this is called, by *Paracelsus*, a Retransmutation.

RETRIMENTUM. An Excrement, or Recriment of Metals, or any other Substance.

RETROCESSIO. The same as *EPANACLSIS*.

REVERBERATIO. The Calcination of a Body in a Reverberatory Heat.

REVERBERATORIUM, or **REVERBERIUM.** A Reverberatory. See *IGNIS*.

REVERSIO. A Relapse.

REVIVIFICATIO. Revivification. The same in Chemistry as *RESUSCITATIO*.

REVIVISCENTIA. The same as *REVIVIFICATIO*.

REVOCATIO. The same as *EPANACLSIS*.

REVULSIO. Revulsion. See *INFLAMMATIO*, and *PHLEBOTOMIA*.

REX. A King. The Invention of several Branches of Physic is ascribed to Kings and Heroes, some of which in ancient Times were very skillful in this Science. I don't know that this Word relates farther to Medicine, unless the Royal Touch could be thought medicinal; in which there is nothing so wonderful, as that a Man of the celebrated *Hijeman's* Understanding, should treat it as a Reality.

RHA. See *CENTAURIUM*.

RHABBARBARUM. *Offic.* J. B. 11, 989, 1075. *Ger.* 316. *Ogilb. Chin.* 1. 212. *Rhabarbarum Officinarium*, C. B. P. 116. *Rhabarbarum genuinum Officinarium*, Park. Theat. 156. *Rhabarbarum siccum*, *Ger. Emac.* 393. *Rhabarbarum lauginosum, sive Lappathum Chinesè longifolium*, Munt. Herb. Brit. 196. *Raili Hill.* 1077. *Rhabarbarum, sive Rheum Officinarium*, *Geoff. Tract.* 296. **TRUE RHUBARB.**

We do not certainly know the Plant of which Rhubarb is the Root; it is probably a Species of *Lapathum*, called by *Herman*, *Lapathum Sinese*. It is brought from *China*, but *Muntingius* pretends that he cultivated it in *Holland*, in his Book *De Vera Herba Britannica*.

It is one of the best and mildest Catharticks in the whole *Materia Medica*; it operates very well on the Bile, and on all the Viscera of the Abdomen, and at the same time strengthens the nervous Fibres. On these Accounts, it is proper in weak Stomachs and Intestines. It is given in Substance from twelve Grains to half a Dram; and in Infusion, from half a Dram to a Dram and a half; and in a small Dose, it becomes an excellent Alterative. It purges the Bile very effectually, and has a greater Force than any other Purgative, in opening Obstructions of the Liver. It is found by certain Experience, to evacuate the Bile, preferably to any other Fluid. On this account, it is the Panacea of Children; and also because it strengthens the Stomach, and carries off all sorts of Matter that stagnate therein. It is a very good Remedy for Worms, and is given to Children subject to chronical Diseases, in a Ptisane, called Rhubarb-Water. The Use of Rhubarb is, however, dangerous, when the Kidneys or Bladder are suspected to be inflamed, because it heats considerably; and for this Reason it is improper in Hæmorrhages. It is very good in a Looseness, because it purges and strengthens at the same time. In Cachexies, it ought to be given in small Quantities for a considerable time. *Geoffroy*.

There are two Sorts of *Rhabarbarum* sold; an Oriental, imported from *China*; and this is ponderous, distinguished by gold-coloured and red Veins, bitterish and astringent, sweet-scented, rather of a yellow Colour; and being moistened, stains the Hand with a Colour like that of Saffron; and is much esteemed for its Virtues. The other Sort comes from *Russia*, and is ponderous, and of a darker Yellow, and less valued than the other.

Rhubarb is a mild and gentle Purger of yellow Bile, and viscous and tartareous Phlegm from the Stomach and first Region. It is a Specific for the Liver cures a Jaundice, and for its astringent Quality is commended beyond other Medicines, for all Disorders proceeding from Relaxation, as a Diarrhæa, Dysentery, and the like.

This Root was unknown to *Dioscorides* and *Galen*; and therefore some are very erroneous, in confounding the *Rha*, or *Rheum*, of the Ancients, with our Rhubarb; for the *Rheum* of *Dioscorides* has less of a cathartic Quality, and wants the Characters of the true Rhubarb, which is a compact Substance, ponderous and dry, of a bitter Taste and acrid Smell, of a reddish Colour on the Outside, and of a light Red inclining to Yellow within, with some Veins of a deeper Colour, and being macerated or chew'd, dyes of a Saffron-Colour. *Rapontic*, on the contrary, is not of a close but thin Substance, and not ponderous but light, and wants the sweet Scent of Rhubarb. *Dale*, from *Le Brun*.

A Decoction of the Leaves very gently evacuates the Belly, resists the Scurvy, and strengthens the solid Parts. Some old Persons say, that the Root of this Plant is the only Cathartic which ought to be given in Diseases; and one of eighty Years in particular tells us, that he was deceived in all other Medicines but Rhubarb. Some assert it to be effectual for correcting a vitiated Bile, and for removing chronic Disorders which owe their Rise thereto. The Root consists of subtil Parts, whence it penetrates through the thinner Parts of the Blood, and tinges the Blood with the Colour of Saffron; for if you take ten Grains of it in the Morning, it will communicate its Saffron-like Colour and Smell to the Urine, which proves it to be of very tenacious Parts with respect to Colour. Hence it becomes effectual for depurating the Blood from thinner Impurities, for cleansing the Kidneys from Sand and Gravel, and for resolving lubricous, grumous, and pituitous Matter. It is an excellent Remedy in all Extravasations and Stagnations of Blood; and it is said to be of extraordinary Efficacy in the Stone, Jaundice, Dropsy, and other Affections of the Liver, proceeding from a vitiated Bile. It is commended also against Inflammations, Weakness of the Stomach, and all Pains incident to it; for Convulsions, for Disorders of the Spleen, Liver and Kidneys; for racking Pains of the Bladder, and Disorders of the Thorax; for Distensions of the Hypochondria, Affections of the Uterus, and the Sciatica; for spitting of Blood, attended with Difficulty; for the Hiccups, Dysentery, Cæliac Passion; to prevent the Return of the Fits in Fevers, and for the Bites of venomous Animals; outwardly applied with Vinegar; it removes the livid Marks of Blows, and the Impetigo. The Root is a very good Remedy in Contusions; cleanses the first Passages, strengthens the Intestines after purging, and is an admirable Cathartic for Infants whose Fibres are too lax. It deserves all the high Commendations bestowed on it for the Dysentery, Diarrhæa, and all Diseases proceeding from a schirrous and cancerous Matter, being exhibited to the

Quantity of two Scruples. Ten Grains given every Morning, so as to be just enough to purge, is the best of Deobstruents in inveterate, hypochondriacal and scorbutic Diseases, and restores the Strength of the Viscera, and the obstructed Fibres. The Virtue of the Root consists in the Mixture of a subtle and acrimonious Salt, with mucilaginous and earthy Particles; those saline and acrimonious Particles, in proportion as they are more or less disengaged from the Mixture of mucilaginous and earthy Particles, in which they stuck and were intangled, the more or less they exert of their stimulating Force. Sometimes they excite so great a Commotion, as to press upon the Liver itself, and especially the Gall-Bladder, whence may follow a double Excretion of Bile; which proves the Root of extraordinary Efficacy in the Jaundice, as was before observed. Its cathartic Virtue consists in its Salt, and not at all in its Resin or oleous Particles, as appears from its Tincture, which is extracted with Water. Now it is clearly demonstrated from Chymistry, that Water can never resolve resinous nor oleous Substances; and besides, the Tincture extracted by Spirit of Wine is not so potent a Cathartic as what is extracted with Water; nay the Water itself, after Mixture, does not become milky, as it happens in all other Tinctures, which are extracted from oily and resinous Substances; and it is further to be observed, that these saline Particles may be so dissipated or dissolved by the Quantity of Liquids, as to be incapable of exerting their Force. The Root when dried up with Age, loses its Acrimony, and all its cathartic Virtue; as it does, also, in Boiling. The Smell of it in some provokes to Stool. It is of Service in a Gonorrhœa, by allaying the Heat of Urine, expelling the Malignity, and stopping the Flux. It is usually prescribed in Substance from half a Dram to two Drams; the Dose of the Extract is two Drams, of the Tincture one Dram. The Root roasted or dried is astringent, and as effectual in a Dysentery as *Terra Sigillata*; and being mixed with Nutmeg and Laudanum, proves an excellent Remedy for an immoderate Flux of the Belly, its astringent Virtue diffusing itself into all Parts. *Pechlius* employed it for Hæmorrhages of the Nose, and such like Cases. The Root is sometimes hurtful in a Vertigo; it destroys Worms, and is an Ingredient in many officinal Compositions. *Hist. Plant. ascript. Boerhaave*.

Alexander Trallianus, in the Opinion of *Dr. Friend*, was the first Physician that mentioned Rhubarb, who recommends it in a Weakness of the Liver, and a Dysentery, tho' *Mr. le Clerc* tells us, that the *Arabians*, indeed, in translating *Dioscorides* and the *Greek* Physicians, confound this Root with the *Rhaponticum*, and ascribe the Virtues, which the Ancients have observed in this latter, to what is properly the *Rhabarbarum*; as may be evident to any who will look into the Description, which *Rhazes* gives of it. And I believe *Alexander* himself, tho' 'tis plain Rhubarb was known in his Time, was in the same Mistake; for he mentions it only as an Astringent, as the elder *Greeks* describe the *Rhaponticum*, without the least Hint of its purging Virtue. *Paulus* seems to be the first who takes any Notice of the purging Faculty in the *Rheum*, (he calls it simply so) and tells us, how we may make some laxative Medicines stronger, by the Addition of this. And *P. Alpinus* says, that some have observed, that even the *Rhaponticum* would sometimes purge, tho' in a less Degree than Rhubarb. The modern *Greeks* gave this Root the Name of *Barbaricum*, not from the Place of its Growth, but from the Place it was imported to; for the Country in the *Upper Ethiopia* was called *Barbaria*, as *Salmasius* well observes, from its lying upon the *Sinus Barbaricus*, in which were many great Emporiums, particularly *Rhapta*, the Metropolis of this Region. This Gulf, upon the East, joins with the *Indian Ocean*; and therefore *Acturius*, and after him *Alyrepsus*, calls this Plant *Περσικόν*. No doubt, in those times it was imported this way to *Alexandria*, and so might be known to these latter *Greek* Physicians. However, I must observe, that *Salmasius* does not take notice of *Alexander's* mentioning Rhubarb; but quotes *Paulus* for it, who does not mention it, but only in general speaks of, and describes the *Rha*. *Garcias ab Herto*, Physician to the *Spanish* Viceroy, tells us, he had learnt in *India*, that all the Rhubarb which was imported thither, and into *Persia*, grew in *China*; that it was brought thither by Sea and Land; but that the latter way of bringing it over *Tartary* to *Ormuz*, was much the best; for by Sea-*Carriage*, 'twas more subject to rot. *Friend's History of Physic*.

RHABDOIDES. *Pag. 220*. A Name for the Sagittal Suture.

RHACHIA, or **RECHIA**. *Pag. 221*. An Overflowing or Redundance of Humours. *Galen. Excerpt.*

RHACHIS. *Pag. 221*. The Spine of the Back.

RHACHIA-AGRA, from *Pag. 221*. The Spine of the Back, and *a. a.* a Prey. A Species of Gout fixed upon the Spine of the Back.

RHACHITÆ, or **RHACHIEI**. *Pag. 221*, or *Pag. 222*. The Muscles belonging to the Spine of the Back.

RHACOS.

RHACOS. *ῥάκος*, from *ῥάσσω*, to break or tear. A Rag used by Surgeons in dressing Wounds.

RHACOSIS, *ῥάκωσις*, is a Relaxation of the Skin of the Scrotum without that of the contained Bodies, being an Affection very indecent to the Sight.

The Method of Cure used by *Leonides*, was to lay the Patient upon his Back, and to cut off the superfluous Skin against a Board, or a Piece of hard Leather, after which he sewed up the Wound. But *Antyllus* used to take up the superfluous Skin with three or four Stitches of a Needle, and then with a Knife or sharp Pair of Scissars, cut off what was without the Stitches; then securing the Place with a Suture, he cured it as he did other bleeding Wounds. *P. Æginet. Lib. 6. Cap. 67.*

RHÆBOS. RHÆBOIDES. *ῥαῖβος, ῥαῖβουδής*. Incurvated, or intorted. *Hippocrates.*

RHAGADES. Fissures, or Chaps.

RHAGADIÆ. Apostemations of the *Pudenda*. *Rulandus.* Or Abscesses of the Knees. *Paracelsus.*

RHAGADIOLUS.

The Characters are;

The Calyx consists of narrow-channel'd Leaves, which, after the Flower is fallen off, become membranaceous Vaginae or Sheaths, each containing a single Seed.

Boerhaave mentions two Sorts of *Rhagadiolus*, which are,

1. *Rhagadiolus*; alter. *Cæsalp. 511. Hieracium Stellatum. J. B. 2. 1014. Raii Meth. 31. Intybus, sive Endivia lutea; humilis, stellato semine. M. H. 3. 53.*

2. *Rhagadiolus*; *Lampsanæ foliis. T. C. 36. Boerb. Ind. Alt. Plant. Vol. I. p. 92.*

It has its Name, perhaps, from the *Rhagades* or Fissures of the Anus, Uterus, and Hands, which it is said to cure. *C. Bauhine* gives it the Name of *Hieracium Foliatum Siliquosa. Hist. Plant. ascript. Boerhaave.*

RHAGADIOLUS, is also a Name for the *Hedypnosis*; *Annua.*

RHAGE. *ῥάγι*. A Fissure, or Chap.

RHAGES. *ῥάγες*. The Stones of Grapes; but the Extremities, or Pulp of the Fingers, are called by this Name. *Gastellus.*

RHAGIUM. The Name of a venomous Insect, mentioned by *Ætius, Tetrabib. 4. Serm. 1. C. 18.*

RHAGOIDES. An Epithet for the *Tunica Uvea* of the Eye.

RHAMMA. *ῥάμμα*. The same as *ACIA.*

RHAMNOIDES.

The Characters are;

It has the prickly or thorny Appearance of the *Rhamnus*; the Flower, which grows only on the Male Plant, is male, apetalous, and consists of a few Stamina, which arise from a bifolious Calyx. The Fruit on the Female Plant consists of a monospermous Berry, containing a roundish Seed.

Boerhaave mentions three Sorts of *Rhamnoides*; which are,

1. *Rhamnoides*; *florifera*; *salicis foliis. T. Cor. 53. mas.*

2. *Rhamnoides*; *fructifera*; *salicis foliis; baccis aureis; T. Cor. 53. femina.*

3. *Rhamnoides*; *fructifera*; *salicis foliis; baccis leviter flavescens. Tourn. Coroll. 53. Boerb. Ind. A. 2. 174. Raii Synop. 3. 445. Olus Germanicus, Offic. Rhamnus secundus Chusii, Ger. Emac. 1334. Rhamnus primus Dioscoridis Lobelia, sive littoralis, Park. Theat. 1006. Rhamnus salicis folio angusto, fructu florente, C. B. P. 477. Raii Hist. 2. 1592. Rhamnus, sive Oleaster Germanicus, J. H. 1. 33. SALLOW-THORN.*

It grows in sandy maritime Places, flowers in *June*, and the Fruit is ripe in *September*. An acid Rob is prepared of the Berries, which is recommended for the Dysentery. *Dale.*

RHAMNUS.

The Characters are;

The Flower is monopetalous, Funnel-shaped, and tetrapetaloid or pentapetaloid. The Pistil, or Pointal, becomes a soft Berry, full of Juice, and full of four callous Seeds, which are gibbous on one Side, and flat on the other.

Boerhaave mentions eleven Sorts of *Rhamnus*, which are,

1. *Rhamnus*; *Catharticus. J. B. 1. 55. C. B. P. 478. Raii Hist. 2. 1625. Synop. 466. Tourn. Inst. 593. Boerb. Ind. A. 2. 212. Rhamnus Catharticus, Spina Cervina, Offic. Rhamnus solutivus, sive Spina insectoria vulgaris, Park. Theat. 243. Spina Cervina Gesneri & Officinarius, Volck. Flor. Nor. 268. Cervi Spina, Rapp. Flor. Jen. 74. BUCK-THORN.*

This is a Hedge-tree or Bush, whose Branches are full of long stiff Thorns, and yellowish green Leaves, about as big as the Sloe-tree, more neatly serrated about the Edges. The Flowers grow several together, being small, four-leaved and yellow, which are succeeded by little round Black-berries when ripe, yielding a purplish bitter Juice, and having three or four

angular Seed. It grows in Woods and Hedges, and flowers in *June*, the Berries being ripe about the latter End of *September*.

The Juice of the Berries purges serous, watery Humours pretty briskly, and is good against the Dropsy, Gout, Jaundice, and Scurvy, and very serviceable against the Itch, and all manner of Eruptions on the Skin.

The only Official Preparation is the *Syrupus de Spina Cervina*, Syrup of Buck-thorn. *Miller's Bot. Offic.*

By the Chymical Analysis, the Berries yield a great deal of acid Phlegm and Oil, a little fixed Salt and Earth: They are purgative, and very good to remove serous Humours in chronic Diseases; by which it relieves those who have the Gout, Palsy, Cachexy, Sciatica, and Rheumatism. Take a Dram, or a Drachm and a half of its Berries, powdered and mixed with a little Conserve of Orange-Flowers. They boil fifteen or twenty Berries in common Broth, adding half a Dram of Cream of Tartar; strain it through a Cloth, and give it the Patient to drink; some mix with it two Drams of Tincture of Steel, or boil half an Ounce of Iron-Rust in a Rag tied up in a Knot, for the Green-Sickness. The most common Use of these Berries is to make a Syrup of them. The Dose is from one Ounce to two, and even to three, when necessary; but it is proper to eat some Pottage after taking it. *Martyn's Tournefort.*

The Berries of this Shrub appear under three Colours; in the first Place, being gathered in the Time of Harvest, then dried, bruised, and macerated in Water and Alum, they appear of a yellow, or rather a Saffron like Colour. Secondly, in Autumn, when through Maturity they have acquired a Blackness, being gathered, bruised, and kept in a Glass-Vessel, they represent a beautiful green Colour, which they call a SAP-GREEN. And, lastly, if they be gathered about the Feast of St. Martin, at which Time they still adhere to the Tree, they appear, according to *Tragus*, of a Scarlet-Colour. *Raii Hist.*

SYRUPUS DE SPINA CERVI.

Syrup of Buck-Thorn.

The College-Dispensatory orders it to be thus made.

Take of the Juice of ripe and fresh Buck-Thorn Berries, gathered in the Month of *September*, two Pints: Let the Faeces subside, and to the clear Liquor add of Cinnamon and Nutmeg, each three Drachms; and let them stand in Maceration for the Space of a whole Day; then strongly press it out, and put to it one Pound and an half of white Sugar, to be boiled up to the Consistence of a Syrup in a Bath-heat.

This has not, till lately, been received by the College into their Dispensatories. The Spices are commonly tied closely in a thin Bag, and suspended in the Syrup while boiling to a Consistence.

The *Edinburgh Dispensatory* directs it in the following manner.

Take of the clarified Juice of ripe Buck-Thorn Berries, three Quarts; brown Sugar, four Pounds; and with a gentle Fire boil them to a Syrup; and while it is yet warm, mix therewith a Dram of the distilled Oil of Cloves, received upon a little Sugar.

To add the Corrector here in the Form of a chymical Oil, gives the Trouble of steeping the Spices ordered for that purpose in the *London Dispensatory*, and answers the End more certainly.

Sydenham observes, that Syrup of Buck-Thorn alone evacuates Water plentifully and little else, without disturbing the Blood, or rendering the Urine high-coloured, as other Purgatives generally do, and has only one bad Quality, as occasioning great Thirst during the Operation. But if it be given, even in the largest Dose, to such as are difficult to purge, it will neither give many Motions, nor carry off enough of Water.

I remember well, adds the same celebrated Author, for it was my first dropical Patient, that I was called about twenty seven Years ago to Mrs. *Salmarsh* in *Westminster*, who had the Dropsy in the greatest Degree I have yet seen, her Belly being swelled to an incredible Size. I gave her an Ounce of Syrup of Buckthorn before Dinner, according to the Custom of that Time, and it brought away an almost inconceivable Quantity of Water, without causing any Disturbance or Pains. Encouraged by this Success, I gave it every Day, interposing only a Day or two occasionally, when she seemed weaker than ordinary. And the Water being by these Means

car-

carried off by Degrees, the Swelling of the Belly diminished daily, and she recovered.

And now being young and unexperienced, I could not help thinking that I was possessed of a Medicine effectual for the Cure of any kind of Dropsy; but in a few Weeks I discovered my Error. For being called afterwards to another Woman, afflicted with the Dropsy, which succeeded an inveterate Quartan, I gave this Syrup, and repeated it frequently, increasing the Dose by Degrees; but having ineffectually attempted to evacuate the Water, inasmuch as the Medicine did not operate, the Swelling of the Belly increased, and she dismissed me; and if my Memory does not fail me, recovered by the Assistance of another Physician, who administered more efficacious Remedies.

The usual Dose is an Ounce, or an Ounce and an half.

2. Rhamnus; spinis oblongis; Cortice albo Monspeliensium. *J. B. 1. 6. 31.*

3. Rhamni primi; altera Species. *Clus. H. 109.*

4. Rhamnus; spinis oblongis; flore candicante, *C. B. P. 477. Boerb. Ind. A. 2. 212. Raii Hist. 2. 1592. Rhamnus albus, Offic. Rhamnus primus Clusii, Ger. Emac. 1334. Rhamnus secundus Monspeliensium sive Primus Clusii, Park. Theat. 1005. Rhamnus Cortice albo Monspeliensis. J. B. 1. 31. RAM-THORN WITH WHITE FLOWERS.*

This is a thorny Shrub, with a smaller Fruit, consisting of a humid Pulp, inclosing a single Seed.

It is a Native of Spain, Portugal, and other southern Countries, flowers in May, and the Fruit is ripe in Autumn. A Cataplasim of the Leaves, as *Dioscorides* says, is good for an Erysipelas, and spreading Ulcers.

5. Rhamnus; Hispanicus; folio Buxi; minor, *T. 593. Lycium, Hispanicum, folio Buxi. C. B. P. 478.*

6. Rhamnus; Afer; folio Pruni sylvestris leviter serrato; spinis brevioribus.

7. Rhamnus; Americanus; folio Buxi rotundo; spinis alternis.

8. Rhamnus; Afer; spinis longis; cortice albo; fructu cæruleo. *Ind. 246.*

9. Rhamnus; Afer; folio Pruni longiori, subrotundo; flore candicante; spinis longissimis. *Lycium Pruni folio subrotundo, flore candicante. Ind. 246.*

10. Rhamnus; Hispanicus; folio Buxi ampliori. *T. 593.*

11. Rhamno similis; Africana; fructu triloculari; folio Pyracanthæ. *Lycium Æthiopicum, Pyracanthæ folio. H. A. 1. 163. Boerb. Ind. Alt. Plant. Vol. 2.*

The Berries of the first Species are gathered in the End of September, or Beginning of October, and their Juice expressed while they are fresh, and boiled up with Sugar, makes what they call Syrup of Buckthorn, which is an excellent Cathartic, and a Specific against a Dropsy, but excites a great Thirst. It is commended by *Hippocrates* for its purgative Quality, but is of no Virtue, as he says, on other Accounts. The Berries purge Bile and Phlegm, but principally serous Humours, whence it is of good Service in a Cachexy, Rheumatism, Arthritis, and Palsy. The Decretion of the Berries, with an Addition of aperient Tincture of Steel, is a very good Medicine for the Chlorosis. *Hist. Plant. Ascrip. Boerhaave.*

RHAMNUS is also a Name for the *Paliurus*, and also for the *Rhamnoides*; *fructifera Salicis foliis; baccis leviter flavescens.*

Rhamnus tertius, Dioscorides, a Name for the *Mespilus*; *spinosa; Pyrifolio.*

Besides the foregoing Species of *Rhamnus*, *Dale* mentions the following:

Rhamnus niger, Offic. Rhamnus niger Theophrasti, Park. Theat. 1007. Raii Hist. 2. 1593. Rhamnus tertius Clusii, Ger. 1152. Emac. 1334. J. B. 1. 34. Rhamnus tertius, flore herbaceo, baccis nigris, C. B. P. 477. Tourn. Inst. 593. BLACK RAM-THORN.

It is sometimes found in our Gardens, and flowers in May. The Decoction of the Fruit is good in Relaxations and Weaknesses of the Limbs, and for the Pains of the Gout. *Dale.*

RHANTERES. *ῥαντηρες*. The internal Angles of the Eyes.

RAPHANEIDON. *ῥαφανειδον*. The same as CAULEDON.

RAPHANELCEON. Oil of Radish-Seeds.

RHAPHANUS. See RAPHANUS.

RHAPHÉ. *ῥαφή*. A Suture.

RAPHIS. *ῥαφίς*. A Needle for Chirurgical Uses.

RHAPONTICUM.

Rhaponticum Offic. Alpin. Exot. 187. Rhaponticum Thracicum, Bocc. Mus. 127. Rhaponticum folio Lapathi majoris glabro, Rha & Rheum Dioscoridis, C. B. P. 116. Rha verum Antiquorum, Ger. Emac. 393. Raii Hist. 1. 170. Rhabarbarum Officinatum, Elem. Bot. 75. Rhabarbarum fortè Dioscoridis & antiquorum, Tourn. Inst. 89. Rhabarbarum rotundi folium verum sive Lapathum sativum rotundi folium amplissimum flore albo, vel Rheum antiquorum, Munt. Herb. Brit. 192.

Rhabarbarum Muscoviticum, Mont. Plant. Gen. p. 6. Rhabarbarum Wissoniarum, Ogilb. Chin. 2. 680. quoad. Fig. Lapathum præstantissimum; Rhabarbarum officinarum dictum. Boerb. Ind. A. 2. 84. Lapathum exoticum, folio amplissimo infar. foliorum Brassicæ, Rupp. Flor. Jen. 44. Hippelapathum maximum rotundi folium exoticum, sive Rhaponticum Thracicum, sed verius Rhabarbarum verum, Park. Theat. 154. TRUE RHAPONTIC.

This has a large thick Root, at the Head, and divided into many Branches, of a dark Brown on the Outside, and a deep yellow Colour within, of a bitterish Taste. From this Root arise several large, somewhat crumpled green Leaves, roundish but pointed at the End, of a sourish Taste, growing on reddish Foot-stalks. From among these arises a thick Stalk, three or four Foot high, having small Leaves, and a numerous Company of white, staminous, six-leaved Flowers, succeeded by large, shining, triangular, brown Seed. It is planted in Gardens. The Root of this Plant, if carefully dried, pretty much resembles the finest Turkish Rhubarb, especially the Heads, having the same reddish Veins, and may deceive those who are not very well acquainted with the Difference. This is what ought to be used in the Shops, as being the true Rhapontic; what the Druggists use formerly to sell for it, being the Root of the *Rhaponticum Folio Helenii incano* C. B. which is a Species of the great Centaury, and of far less Virtue than this.

Rhapontic, as to its purgative Quality, is much weaker than Rhubarb; but is accounted more restraining, and good for Fluxes and Weakness of the Stomach, spitting of Blood, and making bloody Urine. It is likewise good against the Bites of venomous Creatures. It is an Ingredient in the *Theriaca Andromachi*. *Miller's Bot. Off.*

This Root is very like Rhubarb, but may be distinguished from it by its leaving a mucous Taste in the Mouth, its Mucilage being diluted by the Saliva; and because when it is cut it appears regularly marbled, of a red, white or yellow Colour; and these Colours are disposed in a radiated manner. It is less purgative than Rhubarb, requiring a double Quantity to produce the same Effect. It is also a little astringent. *Geoffrey.*

It is common enough in the Gardens of Botanists, and flowers in May. There is scarce any Difference between this and true Rhubarb, only this is more acrimonious, less solid, and more of a Saffron Colour. Rhapontic is less purgative, and more astringent than Rhubarb. It is vulnerary and anodyne, and is of Use in Diarrhœas, Dysenteries, Convulsions, Ruptures, the Orthopnœa, periodical Fevers, and venomous Bites. The Dose in Powder is two Drains, in Infusion six Drains.

It is much controverted among Botanists, as Mr. Ray observes, whether the *Rhapontic* of the Ancients, and the Rhubarb of the Moderns, are one and the same Plant; some affirming, others denying it; and some among the rest are inconsistent with themselves, sometimes making them to be the same, at other times different. The various Opinions and Reasons for them may be found in *J. Bauhine's* Appendix to his *History of Plants*; we shall only observe with *Prosper Alpinus*, that our *Rhapontic* is the true *Rhapontic* of *Dioscorides*, but quite different from the Rhubarb of the Shops. *Dale.*

RHASPE. *ῥασπη*. A Species of Wine mentioned by *Nicolaus Myrepsus*, Sect. 1. C. 500. It is not known what Sort he means.

RHASTONE. *ῥαστων*, from *ῥάδιος*, *ῥάων*, easy, in *Hippocrates*, 3 *Epid.* signifies a Remission or Alleviation of a Pain or Disease. The Word in *Plutarch, de Precept. Sal.* means a Sort of Indolence, or middle State between Pleasure and Pain. It occurs also in *Hippocr. de Artic.* where it imports an easy and gentle Method of Curing, in opposition to a violent Way of Management, and is there recommended to Practice.

RHASUT ET RUMIGI *Maurorum* Rauwolff. Lugd. Append. *Aristolochia orientalis Foliis lanceolatis*, Pit. Tournes.

A Species of exotic *Aristolochia*, growing principally among the Moors and about Aleppo; its Root may be used in Medicine instead of those of the other Species of *Aristolochia*. It contains Plenty of Oil and Salt, and is vulnerary, deterfive, drying and resolvent, being outwardly apply'd. *Lemery des Drogues.*

RHECHIA, *ῥεχία*, *Jon.* for *ῥαχία*. See RACHIA.

RHEGMA, *ῥήγμα*, of *ῥήγνμι*, to break, a Rupture, is a Species of Solution of Continuity in a softer Part, made by a violent Blow, or Fall, without Section or Punction, and proceeding from an immoderate Distension. *Galen, de M. M. Lib. 3. et Lib. de Constit. Art. Med.* And the same Author, *Com. ad 6 Aph. 22.* says that a *Rhegma*, or Rupture, happens when the carnosus Part of a Muscle is broken or torn asunder. *Πηγμᾶς*, in a peculiar Sense, is a Name, as *Hippocrates* says, *Lib. 1. de Morb.* given by some to those slight Spasms which

which affect the fleshy Parts without a Suppuration. In *Epid.* near the Beginning, those little ulcerated Fissures which affect the Lips and Gums, are called *ῥήγματα τῶν ὀδόντων*, "Ruptures of Ulcers," where *Rhegmata* signifies no more than *Rhagades*, or Fissures; and *Lib. 3. de Morb.* Abscesses breaking internally are called *ῥήγματα*; *Rhegmata*.

RHEGMATIAS, *ῥηγματίας ἢ ῥηγματίνης* from the preceding Word, *Lib. 1. et 2. de Morb.* is one who labours under the inward Rupture of an Abscess. *Rhegmaticæ*, *ῥηγματῆαι*, *Lib. de Aere, Aqu. et Loc.* are Persons affected with a Rupture of some internal Vessels.

RHEGMOCHASMOS, *ῥηγμοχασμός*, from *ῥήγμα*, a Rupture, and *χάσμα*, a gaping Orifice; a Rupture with a subsequent Hiatus, is one of the three Causes of an *Hæmoptoe*, assigned by *Celsus*, *Lib. 4. Cap. 4.* the other two being *ANASTIMOSIS* and *DIABROSIS*. See these Words.

RHEMBE, *ῥέμβη*, from *ῥέμβω*, to wander, is the same as *Plane*, *πλάνη*, an Error or Aberration, *Galen in Exegesi* where he seems to have an Eye to that Passage, *7 Epid. κ' κατὰ φωνὴν ἢ ἐν τῇ ῥέμβῃ*, "He stumbled in his Speech," (mistook, and spoke one Thing for another.) Here *Galen*, for *ῥέμβη*, reads *ῥέμβη*. Hence *ῥέμβωδες πνεύματα* in *Artæus de Caus. et Sign. acut. Morb. Lib. 2. Cap. 2.* are erratic, or rather deliratory, Fevers in Opposition to *συνεχέες*, continual Ones.

RHENANUM VINUM. Rhenish Wine. See **VINUM**.

RHENCHOS, *ῥήγχος*, from *ῥήγχο*, to snore. Snoring. This Affection is otherwise called *Stertor*, which is a Sound like that of the *Cerebrum*, but greater and more manifest. Many confound those Affections, and make them to differ only in Place and Magnitude, calling by the Name of *Stertor* that Sound or Noise which is heard or supposed to be made in the Passage between the Palate and the Nostrils, as in those who sleep; that boiling or bubbling Noise which in Respiration proceeds from the Larynx, or Head, or Orifice, of the *Aspera Arteria*, they call *Cerebrum*; but if the Sound comes from the *Aspera Arteria* itself, they will have it called *Cerebrum*, that is, as some understand it, a rattling, or as others, a stridulous, or wheezing Roughness of the *Aspera Arteria*. In dying Persons this Affection is called by the *Greeks* *ῥήγχος*, *Rhenchos*, which is a Snoring or rattling kind of Noise, proceeding, as it were, from a Conflict between the Breath and the Humours in the *Aspera Arteria*.

This and such like Affections are owing to a Weakness of Nature, as when the Lungs are full of Pus, or Humors, to which purpose we read in the *Prognostics* of *Hippocrates*: "It is a bad Sign when there is no Expectoration, and no Discharge from the Lungs; but a Noise, as from an Ebullition, is heard in the *Aspera Arteria*, from a Plenitude of Humor." Expectoration is suppressed either by the Viscidity of the Humor, which requires to be discharged, and which adhering to the *Aspera Arteria*, and being there agitated by the Breath, excites that bubbling Noise, or *Stertor*; or by an Obstruction of the Bronchia; or, lastly, by a Compression of the *Aspera Arteria*, and Throat; whence the Passage is straitened, in which the Humours being agitated, excite such a kind of Noise as before described. Hence *Galen* calls those who are strait-breasted *stertorans*. That Author assigns but two Causes of this Symptom, which are either the Straitness of the Passage of Respiration, or the Redundance of Humours, or both together; but it is necessary to add a third, which is the Weakness of the Faculty, which is the Cause of the *Rhenchos* in dying Persons, where Nature is too weak to make Discharges.

From what has been said, we conclude that this Symptom, or this Sort of Fervor, or Ebullition in the Throat, is not always mortal; but only when Nature is oppressed with the Redundance of Humor in such a manner, that the Lungs cannot discharge themselves by spitting; or the Passage appointed for the Breath, being the *Aspera Arteria*, is very much obstructed, upon which account many dying Persons labour under a *Stertor* with their Mouths gaping. An Instance of this you have in *Menon*, *7 Epid. 47.* of whom it is said, "That he had a Wheezing in his Throat, or *Aspera Arteria*, with a *Stertor*;" and in the Wife of *Theodorus*, *27.* where we read, "That she was affected with a stridulous kind of Hoarseness of the Breast and *Aspera Arteria*, with a bubbling kind of Noise, and Fluctuation of Pus." Again, *Text. 9.* it is said of the Wife of *Polyrates*, that "she was affected with a Wheezing about the internal Parts of the *Aspera Arteria* and Fauces, and a *Cerebrum*, that is, as *Valerius* renders the Word, *Asperitas rancida*," a harsh kind of Rattling or Snoring. And *Hermoptolemus*, *Text. 16.* afflicted with a Peripneumony, on the seventh Day spit a pale kind of Matter, and fell into a *Stertor*. The Woman, also, *Text. 20.* who laboured under a Quinsy, dy'd at last in Convulsions with a *Stertor*. And, to name no more, the Son of *Amphibrades*, who lay sick of a Pleurisy, was much molested with a Wheezing or *Cerebrum* about the Fauces. In all

these Instances this Symptom must be ascribed partly to the Weakness of Nature, and partly to the Redundance and Viscidity of the Pus or Humor. It is indeed always a bad Sign, and much to be dreaded; but is highly pernicious in the Progress of a Distemper, when the Strength is very much exhausted, as it plainly indicates that Nature is no longer capable of making Excretions, and is on the Point of Suffocation; and this Symptom, in such a Case, is necessarily attended with some other mortal Sign. But in the Beginning of a Disease there frequently happens a kind of Ebullition, or Fervor, in the Throat, from the Redundance of Humour, or its Viscidity, which disposes it to adhere to the *Aspera Arteria*; but when this Humour comes afterwards to be concocted, and discharged by Spitting, the *Cerebrum*, or Ebullition ceases. And such a favourable Event may be predicted from the Appearance of other good Signs, at the same time, without the Attendance of any bad Sign, as it happen'd in the Case of *Pisistratus*, *7 Epid. Text. 56.* "who had a *Stertor* in the Fauces, but supported himself under the Distemper very well, and had the Use of his Reason. His Fever remitted, he had the Benefit of due Excretion, the *Stertor* ceased, and he recover'd his Health." *Prosper Alpinus de Præfag. Vit. et Mort. Ægrot.*

RHEON. A Name given by Authors both to the true Rhubarb and Rhapontic.

RHETINE, *ῥητινῆ*. Resin.

RHEUM. The same as **RHEON**.

RHEUMA, *ῥέυμα*. A Flux, or Fluxion, from *ῥέω*, to flow.

RHEUMATISMUS. A Rheumatism.

The Ancients called all kinds of Pains affecting the external Parts, or the Joints, by the common Name of Arthritis, whilst the Word *Rheumatismus* was not so much as known among them. Thus *Aræus*, in *Lib. 2. Chron. Cap. 12. de Arthritide*, uses the following Words. "This Disorder in some Patients wanders over the whole Body, and is at last convey'd to the Muscles of the Back and Thorax. 'Tis hardly credible how far this Misfortune spreads and diffuses itself; the Vertebrae of the Back and Neck become painful, as also the Top of the Os Sacrum; and soon after this Pain is communicated to the Kidneys and Bladder." But in the last Century some celebrated French Physicians, such as *Carolus Piso*, *Riverius*, *Ballonius* and *Chefneau*, have called the Pains afflicting the intermediate Spaces between the Joints, and Muscles of the Neck, or of either Arm, or of the anterior or posterior Part of the Thorax, the Shoulders, Scapulae, Thighs, the Hands, by the Name *Rheumatism*. Whilst they called those Pains Arthritic, which afflicted only the Joints and Articulations; tho' these Pains received different Denominations according to the different Parts they affected; thus when they appeared in the Feet, they were called *Podagra*; in the Hands, *Chiragra*; in the Elbows, *Onagra*; in the Teeth, *Dentagra*; in the Vertebrae of the Back, *Lumbago*; and in the Articulations of the Os Ischium, *Dolor Ischiadicus*, or the Sciatic Pain: And even at this Day, 'tis customary to call a Beginning and easily-remov'd Arthritis, *Chiragra* or *Podagra*, by the Name of *Rheumatism*.

But as rheumatic and arthritic Pains differ very considerably with respect to the Parts affected, the Causes, Symptoms, and Method of Cure; so the more sagacious Physicians have considered them as distinct and separate: Nor is the Difference between a beginning and inveterate Arthritis of small Importance in the Practice of Medicine.

In a Rheumatism the Muscles, with their common Membrane, and their Tendons, where they are inserted in the Bones, are in various Limbs, and other Parts of the Body, affected with violent Pains and Spasms; whereas, in an Arthritis, the tendinous and nervous Ligaments, by which the Bones are articulated, in consequence of their Cohesion with the Periostium, are violently afflicted. But as in a beginning Arthritis and Podagra the Pain is rather lodg'd in the Surface of the Ligaments, so in an inveterate Disorder of this Kind the peccant Humor, which is the Cause of the Pain, is seated deeper, and rather possesses the Space between the Cavities of the Articulations. A true Arthritis and a Rheumatism, also, differ in this, that the former frequently recurs, miserably torments the Patient, continues long, and is not to be cured without Difficulty; whereas a Rheumatism sometimes attacks the Patient but once or twice in his Life, does not continue so long, is more easily removed, and capable of a more expeditious Cure. The Pain in these two Disorders is, also, frequently of a different Kind; for in a Rheumatism it is accompanied with Tension, Oppression, a Sense of Weight and Coldness, without any conspicuous Tumor or Redness; whereas, in an Arthritis, the Pain is more lancinating, distending, pungent, and, as it were, threatening a Rupture, with a considerable Tumor and Redness.

As the Cause of every uneasy Sensation is either a Redundance or peccant Quality of the Juices, stagnating and con-

gested in the minute Vessels of the Coats and Membranes, by which they are violently distended, vellicated and corroded, so 'tis not to be doubted but these Causes concur to the Production of rheumatic and arthritic Pains.

'Tis certain, from Experience, that not only Persons who are young, of sanguineo-ferous Constitutions, and of spongy Habits, by the Admission of Cold; or a northerly Wind impetuously rushing in upon any Part; but also that plethoric Patients, Women, and Men otherwise of a robust Habit, by neglecting Venesection or Scarification, especially after an obstructed Perspiration, feel rheumatic Pains in the Neck, Scapulæ, Shoulders, Back, Sternum and Thorax, or are even afflicted with gentle Degrees of an Arthritis. Whereas those who are naturally of lax and less fibrous Habits, who are descended from arthritic and gouty Parents, or whose Strength and the Tone of whose Parts are highly weakened by the immoderate Use of Venery, Wine, Luxury, or violent Fatigue and Commotions of Mind, are afflicted with a true, a deeper and more obstinate Arthritis, especially in the Feet.

Those labouring under a violent Arthritis, especially of the inveterate kind, when this ceases, are easily afflicted with an Inflammation of the Kidneys from the Stone; and when this ceases, they relapse alternately into an Arthritis. Besides, 'tis certain, from daily Experience, that arthritic Patients, especially those afflicted with the Gout in the Feet, generally labour under some Fault of the Digestion, and have their Primæ Viæ turgid with Eructations, Flatulences, Spasms, and a Load of peccant Humours; whilst, at the same time, their Bodies are not sufficiently soluble. Besides, we observe, that many Persons afflicted with the Gout, are also subject to the hemorrhoidal Discharge, tho' without any Relief, violent Pains seizing the Os Sacrum, and the Veins of the Anus sometimes becoming tumid.

As the Nature and Condition of the Humours, which generate and support rheumatic and arthritic Pains, are not always the same, so these Disorders often differ widely with respect to their Degrees, Genius and Symptoms; for where there is only a Redundance of Blood, as yet not much contaminated by impure Particles, the Pains are generally mild and slight, which happens in a simple Rheumatism, and the beginning Arthritis of plethoric Patients. But the Pains are far more violent, when they are sustained and supported by a Collection of impure and excrementitious Serum; for I have often observed, that as in all Pains, so also in those which violently afflict the external and nervous Parts, it rarely happens that a Redundance of temperate and pure Blood alone produces the Effect, since it is generally mixed with an excrementitious Serum; for 'tis either too thin, serous, and impregnated with a small Quantity of red Globules, or contaminated by a viscid, glutinous and tenacious Serum. The excrementitious and impure Salts in the Mass of Blood also differs much with respect to their volatile, fixed, saline and tartarous Acrimony, and consequently produce different Symptoms. So that, according as the Nature and Genius of these Causes differ, the Rheumatism may properly be distinguished, by Physicians, into the sanguineous, caecochymic, scorbutic, fix'd, and wandering.

Hence it happens, that in different kinds of Pains, Blood taken from the Veins differs both with respect to Colour and Consistence: For sometimes, when it is received in warm Water, it is observed to abound with a large Quantity of viscid Mucus, consisting of Fibres variously interwoven. Sometimes the Serum, which floats above it, is immediately form'd into a Concretion resembling Glew or Leather, just as it happens in those afflicted with a violent Peripneumony. At other Times the Serum is very thin, and the Blood of a florid red Colour, which frequently happens in a Rheumatism and wandering Gout, and is a certain Sign, that a Salt of a somewhat alkaline and volatile Nature is mix'd with it. *Carolus Piso*, in *Libr. de Morb. ex Colluv. Serof. oriund. Sect. 5. Cap. 3.* in Pains of the external Parts, tells us, That he has observ'd the Blood so full of serous Sordes, that when it was set by in a Basin, hardly a twentieth Part which had the Colour and Consistence of Blood subsided to the Bottom, whilst the remaining Part, which floated above, was entirely aqueous, but cover'd with a viscid white Pellicle. *Ballonius*, in *Libr. de Rheumatismo*, tells us, that he frequently found the Blood, which he had taken in a large Quantity from the Arm, impure and resolv'd into a putrid Serum. And I myself have often observ'd, that tho' in the Beginning of these Pains the Blood was of a laudable Consistence, yet in Process of Time, or when the Disorders were deeply rooted, it was highly serous, corrupted, and covered with a tough Pellicle. For a Redundance of Blood is the first Cause and Origin of these Pains; but in the Course of the Disease, it is, by the hot intestine Motion, and the continual Agitation, converted into a peccant Serum; for which Reason *Carolus Piso* classes all the Species of the Arthritis and Rheumatism among the Diseases

arising from a serous Sordes; which seems to be confirmed by the thin and copious, as also the slimy and turbid Urine, together with the profuse and serid Sweats which generally accompany these Disorders.

It is a Question of no small Importance in the Theory of Medicine, how and in what manner, since the Blood is in a perpetual Motion through the Vessels, the peccant Serum is separated from it, becomes flagrant, and is deposited in the external nervous Parts. And tho' the Theory of the Ancients was entirely destitute of the Succours of natural Philosophy and Anatomy, in investigating the Causes and Generation of Disorders, yet *Hippocrates*, in *Lib. de Flatib.* has, as it were, from the Principles of natural Philosophy and Mechanics, made a beautiful Attempt to explain the Causes of these painful Defluxions, and the Method of their Generation; for he tells us, that Blood naturally hot, when forcibly convey'd through a narrow Passage, cannot, in consequence of Obstacles and Obstructions, pass quickly through it: So that the thinnest Part of the Blood is not received into the Veins, but being accumulated, flows through other Vessels, and when it stagnates, produces Fluxions and Pains in particular Parts.

But that we may have a more adequate Idea of the Generation of these Disorders, we must first consider the occasional and accidental Causes, and then the manner in which these Pains generally attack the Patient. Now, 'tis certain, from Experience, that rheumatic Pains of the Limbs are most incident to those Persons, who, after intense Labour, Motion, and Exercise, the Use of the warm Bath, or an intensely hot Atmosphere, suddenly expose themselves to a cold Air, or a northerly Wind. Soon after which they are seiz'd with a certain Horripilation and Weariness, and then with a heavy, oppressive, and contractory kind of Pain in various Parts; such as the Neck, the Scapulæ, the Shoulders, the Back, the Loins, or in that particular Side into which the Cold and northerly Wind has penetrated, and sometimes all over the Body: And the Disorder is the more violent, the more turgid the Body is with Blood. I have, also, frequently observed Persons, after liberal Venesection, Women after copious menstrual Discharges, or Fluxes of Blood, from the Uterus produc'd by Abortion, Patients after violent Fluxes, whether spontaneous or induced by strong and drastic Purgatives, when they have too long exposed their Bodies to a cold northerly Wind, or to a moist and cold Night-Air, afflicted with violent rheumatic Pains; for no other Reason, than that by the Violence of the Cold penetrating the Pores, the small lymphatic Veins and Arteries, which contain and convey the Blood for the Nutrition of the Parts, are compressed, contracted, and clos'd up. Hence it happens, that the Serum being no longer capable of being contain'd in and convey'd thro' its Vessels, overflows like a River, and is deposited sometimes in one Part and sometimes in another, or is placed without the Vessels and the Laws of the Circulation. But since all extravasated Humours, in Process of Time, lose their mild and natural Crasis, assume a foreign Nature, and become partly glutinous and tenacious, and partly acrid and saline; hence it happens, that by the Tension, Compression, Lancement, and violent Stricture of the fibrous and nervous Parts, intense Pains, frequently accompanied with a Sense of chilly Cold, are produc'd. Sometimes it also happens, that the extravasated Serum, like the White of an Egg, degenerates into a thin and corrupted Sordes, which cannot be again coagulated by a strong Heat, and passes from one Part to another; especially from the superior to the inferior Parts, through the fleshy and porous Substance of the Parts. For nothing more frequently recurs in Practice, than to observe a Rheumatism changing its Place, and falling from the Head to the Neck, the Scapulæ, the Shoulders, and Breast, especially in young Persons, whereas in Adults it falls down to the Back, the Parts about the Cocendix, and the Thighs.

'Tis also certain, from Experience, that about the Spring; and in the Month of *October*, when there are remarkable Changes of Weather, from hot to cold, and from cold to hot, or when contrary Winds suddenly succeed each other, arthritic and rheumatic Disorders most frequently attack Persons who abound with an impure Blood and Serum, prey upon the Body, and afflict it with a kind of febrile Commotion. These Disorders are preceded by a spontaneous Lassitude, and Heaviness of the Limbs, accompanied with a Refrigeration of the Extremities, a Horripilation, and a certain Sense of Cold. This State is succeeded by an uneasy internal Heat, especially about the Præcordia, a quick and contracted Pulse, Restlessness, Thirst, Loss of Appetite, Costiveness, and sometimes a Difficulty of Breathing. Afterwards a violent and acute, or an oppressive Pain, accompanied with Tension, seizes sometimes one and sometimes another Part, and is increased in the Night-time, just as it usually happens in catarrhal Fevers. And tho' this febrile Commotion is in some mild, and in others violent, and

is easily remov'd, yet a Pain remains in the Part affected, and often continues for a long time to rack them. But since every febrile Commotion is of such a Nature, as spasmodically to affect the external and nervous Parts, and by contracting and compressing the minute Roots and Extremities of the Vessels, accumulates the Blood and Humours in the large interior Vessels, and produces a quicker Systole in the Heart and Arteries, it can hardly happen otherwise, but that the Blood being convey'd with a great Impetus into the lateral Ramifications of the small Arteries, which do not contain red Blood, should at last deposite its serous Portion without the Vessels; and this is the Origin of the Pain. But 'tis to be observ'd, that these painful spasmodic Strictures of the sensible Parts are not produced by a thin Serum entering into them, since this Species of Serum is in a great measure dissipated; but rather by its more viscid Parts, and its saline pointed Spiculæ intimately insinuating themselves into their Pores. Hence these Disorders do not quickly and easily yield to Medicines, because the peccant Matter is deeply impacted in the Parts.

From what has been said it is sufficiently obvious, that an Obstruction of the Circulation of the Blood, and of its Regress through the minute Vessels, constitutes the immediate and evident Cause of these rheumatic Pains; which may be more clearly demonstrated from this, that, as I have often observ'd, when a tight Bandage, after Venesection in the Feet for some severe Wound, is left applied for twenty-four Hours, an uneasy Pain, like that of the Gout, and which lasts for many Days, seizes the Articulations of the Foot, and especially of the great Toe. An Accident of this Nature lately happened to a celebrated Physician, who for certain Reasons had a Vein opened in the Calf of his Leg, but was obliged to use a tight Ligature, because the Vein lay low. Next Morning a violent Pain and Tumour had seized not only the Calf of his Leg, but also the Articulations of his Foot; so that there was a Necessity for a careful Discussion of the Tumour, by internal and external Medicines, lest it should degenerate into a greater Misfortune. From what has been said, we, also, see that there is a great Affinity betwixt a Rheumatism and an Arthritis, since the former sometimes so effectually counterfeits the latter, as by some to be called an universal and wandering Arthritis, which sometimes suddenly seizes several Articulations, violently afflicts the Vertebrae of the Spine, and the Joints of the Bones. Nor is it strange to observe, in Practice, that fix'd and wandering Rheumatisms, in those who are frequently subject to them, especially if they have besides contracted a Weakness, are at last transform'd into a true Arthritis. And since an Hemierania, a Pleurisy, a spurious Hepatitis, and a Tooth-ache, are Species of Rheumatisms, 'tis not to be doubted, but they are generated by the same Causes, and in the same manner.

'Tis certain, from Experience, that the Rheumatism spares neither that Age nor Sex, which *Hippocrates*, in *Sect. 6. Aph. 29, & 30.* in some Circumstances, pronounces free from the Arthritis. But 'tis in a particular manner observable, that those who in their Youth have been subject to frequent Hemorrhages of the Nose, which have afterwards ceased, are subject to Rheumatic Pains; which is also observ'd by *Hippocrates*, in *Prorrh. Lib. 2.* where he informs us, that those who have Pains and Tumors about the Joints, have large Viscera provided in their Childhood and Youth, the Blood has ceased to flow from their Nostrils; for which reason he orders us carefully to enquire, with respect to the Eruption of the Blood, whether it happen'd in the Patient's Youth, as also whether there are pruriginous Prickings, as it were, with a Nettle, either in the Breast or Back, since these are sufficient Proofs of the Impurity of the Serum. But what *Hippocrates* affirms, with respect to Hemorrhages of the Nose, may, in my Opinion, be asserted concerning all other salutary Excretions of the Blood: For nothing more frequently occurs in practice, than that Women, especially of a sanguineous Complexion, after the fiftieth Year of their Age, when their Menstrues totally cease, are afflicted with wandering Pains here and there, unless such a Misfortune is prevented by seasonable Venesections. 'Tis also sufficiently known to Practitioners, that an usual Discharge from the hemorrhoidal Veins, proceeding duly and at proper Seasons, may render Persons free both from arthritic and rheumatic Pains; to which they become subject, when that Discharge ceases or is suppress'd: 'Tho', at the same time, I have known Instances of weak and cachectic Patients, in whom neither the arthritic nor nephretic Pains ceased, even under a due hemorrhoidal Discharge.

As for the Generation of these Disorders, 'tis to be observ'd, that Persons who have strong Exercise, live sparingly, and drink Water, are free from them; whereas those who indulge themselves in Idleness, drink Wines and spirituous Liquors, live luxuriously, and are addicted to immoderate Venery, especially when young, are frequently afflicted with violent arthritic and rheumatic Pains.

'Tis also to be observ'd, that a remarkable Disposition to these Disorders is produced by other previous and long-protracted Diseases, particularly intermittent Fevers, especially when ill-manag'd. Thus *Ballonius*, in *Lib. de Rheumatismo*, informs us, that he has observ'd many, towards the End of chronical quartan Fevers, afflicted with violent Pains of all the Joints. I have, also, known long-continued Colics, and Pains of the Abdomen, succeeded by wandering severe Pains of the Joints recurring at stated Periods.

There is also a scorbutic Rheumatism, in which the whole Mass of Lymph and Serum is contaminated with impure, excrementitious, salino-sulphureous and acrid Particles, which now and then discover themselves by Efflorescences, Spots, and a Purple Fever; and this Species of Rheumatism draws its Origin from an improper, heavy, and saline Diet; an idle and sedentary Life; a continual Living in a foggy and vapid Air; and long-protracted Sorrow: For which Reason it is very frequently incident to the Inhabitants of Maritime Countries.

But a venereal Rheumatism is of a more terrible kind, and in the Night-time, especially, afflicts certain nervous Parts in those who by impure Coition, have contaminated their whole Mass of Lymph and Blood, with a virulent and putrid Miasmata. But all the Causes hitherto enumerated, seem to have a Tendency to increase the Serum, render it impure and intemperate, and impair the Strength of the solid Parts, by diminishing the salutary Excretions; by which means Stagnations and Defluxions of the Serum, together with intense Pains, are produced.

Hence the reason is obvious, why rheumatic and arthritic Pains are happily terminated by copious Discharges of Urine, spontaneous Sweats, and natural Hemorrhages; and why the Patients receive great Relief from various Efflorescences of the Skin. Thus *Hippocrates*, in *Aph. 74. Sect. 4.* tells us, "That where there is a Probability of an Abscess about the Joints, the Patient is reliev'd by discharging a large Quantity of thick white Urine, like that which in some Patients begins to be discharg'd on the fourth Day in Fevers accompanied with Weariness. But if an Hemorrhage of the Nose happens, the Disorder is soon terminated." By Fevers accompanied with Weariness, we may justly understand those of the rheumatic Kind, which seize with a Sense of Pain and Weariness all over the Body. I have, also, frequently observ'd, that arthritic Pains have ceased upon the spontaneous Appearance of Ulcers in the Legs; and again seized the Patient when these were artificially consolidated. I have also known violent arthritic Pains totally removed by the Appearance of a Psores, or an Itch, resembling a white Leprosy; for as a Translocation of the peccant Matter from the internal to the external Parts is highly salutary, so, on the contrary, a Translocation of it from the external to the internal Parts and Viscera, is highly prejudicial.

So long as rheumatic Pains and beginning Gouts remain in the external Parts, and the peccant Humour is not preposterously drawn inwards to those of a more noble Kind, they are free from Danger, and do not readily prove fatal to the Patient: For as in the first Years of Life, and in Youth, these troublesome catarrhus Defluxions in the Head, and those of a rheumatic Kind in the muscular Parts, accompanied with frequent Hemorrhages of the Nose, denote a remarkable Weakness of Nature, or a diminish'd Tone and Strength of the Solids; so, in Youth and Manhood, they prognosticate various chronical Disorders, which in their Causes and Genius have a near Affinity with these, especially when the Patients are descended from morbid and hypocondriac Parents.

THE CURE.

From what has been said, 'tis sufficiently obvious, that the whole Intention and Method of Cure consists in duly considering the particular Habit of the Patient, and the different Causes of the Disorder; whether it is recent, and proceeds from a Redundance of Blood; or, from a Collection of impure Serum, and is of long-standing and deep-rooted; then in forming proper curative Intentions from these Circumstances; and, last of all, in prescribing Medicines proper for answering these Intentions.

When, therefore, the Patient is evidently plethoric, and an universal Rheumatism, accompanied with a febrile Commotion, has seized all his Limbs, and is therefore, as the Ancients called it, of the sanguineous Kind; the most effectual and expeditious Means of Relief consists in Venesection, used in the Beginning of the Disorder, as is justly observ'd by the most skillful Physicians. Thus *Alexander Trallian*, in *Lib. 11.* speaks in the following manner: "When you suspect that the Humour collected about the Joints is of the sanguineous Kind, you are, if nothing contra-indicates, to use Venesection:

“ section : For by this means I have known many either to-
 “ tally cured, or rarely afflicted with Defluxions; because;
 “ in the very Beginning of the Disorder, they had Blood
 “ taken from them, both for the Purposes of Evacuation and
 “ Preservation.” This Doctrine is confirm’d by my own Ex-
 perience, for I have known many plethoric Patients, who, by
 external Causes, having Perspiration totally obstructed, have
 been seized with intense Pains of the whole Body, accompanied
 with a Stupor and Immobility of the Parts; but were totally re-
 covered by seasonable Venesection in the Beginning, which may,
 if Necessity requires, be safely and boldly repeated about the
 fourth Day. I have, also, known Persons of a middle Age, and
 of sanguineo-choleic or melancholic Constitutions, seized with
 a mild Gout in the Hands or Feet; but have had these Misfor-
 tunes prevented, or entirely removed, by Venesection about the
 Equinoxes, or sometimes about the Summer Solstices.

And as the sanguineous Rheumatism is in no Country more
 frequent than in France, on account of the sanguineous Com-
 plexion of the Inhabitants, and the Tendency of their Ali-
 ments to generate a large Quantity of Blood; so ’tis not sur-
 prising, that the French Physicians, who first wrote well on
 a Rheumatism, should greatly recommend Venesection for its
 Cure. Thus *Ballonius*, in *Lib. de Rheumatismo*, speaks thus:
 “ I recommend Phlebotomy in a Rheumatism, and affirm it
 “ to be a salutary Remedy.” *Carolus Piso* also affirms; that
 repeated Venesection is of great Importance, both in prevent-
 ing and curing a Rheumatism, and furnishes us with many
 memorable Instances of it. *Riverius*, in *Cent. 3. Obs. 42.*
 and *Cent. 4. Obs. 42.* mentions an obstinate Rheumatism, re-
 moved in two young Men, by Venesection seven times re-
 peated. *Leon. Botallus*, the first Author of Venesection in
 France, in *Lib. de Curat. per Sang. Mission. Cap. 12.* evinces,
 by many Reasons and Instances, how useful repeated Vene-
 section is in rheumatic Pains, and how speedy a Relief is af-
 forded by it. *Sydenham* also affirms, that the Cure of this
 Disorder is to be expected from nothing but Phlebotomy,
 which is to be repeated in a few Days. In *M. N. C. Dec. 4.*
An. 9. Obs. 120. there is a memorable Instance of an univer-
 sal Rheumatism cured both happily and expeditiously by repeat-
 ed Venesection alone. But Venesection is still more necessary
 both for the Prevention and Cure of a Rheumatism in Women,
 whose Menstrues are either defective or totally suppressed; and in
 Men who have an usual hemorrhoidal Discharge suppressed.

Supported both by Reason and Experience, I assert, that be-
 sides Venesection, in a hot Arthritis and Rheumatism, when
 beginning and accompanied with a febrile Heat, a present and
 speedy Relief is afforded by mild Diaphoretics, moderately
 mixed with nitrous Substances, and exhibited in small but re-
 iterated Doses, persisted in for a considerable Time; since by
 their Means the intense Heat, Fervour and Orgasm of the
 Blood, is not only allayed, but also the peccant Humour gen-
 tly, successively, and equally dissolved. The most proper Su-
 dorifics for this purpose, are the Powder of Crabbs Eyes, sof-
 file Unicorn, burnt or unburnt Hartshorn, diaphoretic Anti-
 mony, or its Cerufs, Amber, prepared Shells, and Cinnabar,
 with the Addition of a sufficient Quantity of purified, or rather
 artificial Nitre, which are to be exhibited in pectoral and gently
 anodyne Waters; such as those prepared of the Flowers of
 Elder, the Egyptian Thorn, Meadow-sweet, and the Lime-
 Tree; of black Cherries, *Carduus Benedictus*, Ladies Thistle,
 and Scabious. Nor is it improper, in order the better to check
 the febrile and erratic Heats, to add to these a due Quantity of
 Citron-Juice; or to render the Medicine more grateful, of the
 Syrup of Citron-Juice. For common Drink, we recommend
 Whey, acidulated with Cream of Tartar, or impregnated with
 Tamarinds; or Water boiled with the Shavings of Hartshorn,
 the Roots of Vipers-Grafs, Succory, Liquorice and Grafs, to-
 gether with the Seeds of Fennel.

But when Rheumatic Pains arise not so much from a Re-
 dundance of pure and well-conditioned Blood, as from a Pleni-
 tude of Blood of the impure and serous kind, especially in
 weak Persons of serous and phlegmatic Constitutions, than Ve-
 nesection, especially in the Cure, is not to be used without
 the greatest Caution. Hence *Galen*, in *Lib. 6. Aphor. 47.*
 justly observes, “ That Patients afflicted with a Plethora, are
 “ to be relieved by Venesection; but that to such as abound
 “ with corrupted Juices, we are to exhibit Purgatives.” And
 by these Evacuations, he affirms, that he not only cured many
 who for a long time before had been every Year afflicted with
 Diseases, but also removed and warded off a beginning Gout
 and Arthritis for many Years. But those who have been often
 harrassed with Defluxions of this kind, receive more Injury
 than Benefit from Venesection, especially if they are old or
 of weak Constitutions.

Hence ’tis obvious that the Ancients were of opinion, that
 the Differences of Pains, especially of the arthritic kind, with
 respect to their Causes, were to be carefully observed in the
 Cure; for there is one Method of curing a Rheumatism, or

a beginning Arthritis, tho’ universal, in a plethoric Habit,
 which is produced by a Redundance of Blood, in consequence
 of an obstructed Perspiration: But the Method of Cure is
 quite different; where an intense Pain is obstinately fixed in
 one Part, accompanied with a violent Sense of Cold, and ex-
 cited by Cold imprudently admitted to that Part in serous Bo-
 dies. But still different Measures are to be taken, when a
 plethoric Patient, under a long Course of the Disease, or by
 means of a preposterous and unskillful Cure, degenerates into a
 cachectic or ecchymic State; and little laudable Blood of a
 due Consistence, but a great deal of serous and excrementitious
 Sordes, is contained in the Vessels; for in Cases of this kind,
 those Remedies are principally indicated, as proper, which
 gently, tho’ effectually, eliminate the peccant Serum through
 proper Excretories, that is, by Stool, Urine and Perspira-
 tion.

With respect to the Use of Evacuants, Violence is in this
 Case by no means to be used; but the bilious, viscid, and se-
 rous Sordes, are to be gently and gradually eliminated by
 mild and temperative Laxatives. This Intention I have from
 Experience found excellently answered by Infusions prepared of
 Water, mixed with half the Quantity of Wine, and gently
 boiled with the Roots of Succory, Burnet, and Polypody,
 Rhubarb, Senna Leaves without the Stalks, *Carduus Benedic-
 tus*, the Tops of the lesser Centaury, Agarick, Orange and
 Citron Peel, the Bark of Sassafras Wood, Raisins, and *Tar-
 tarus Tartarizatus*. It is also beneficial to chew about two
 Scruples or a Dram of Rhubarb, with fat Raisins or Currans;
 for I can from Experience affirm, that Rhubarb taken in Sub-
 stance evacuates twice as much as if it was exhibited in De-
 coctions or Infusions; and at the same time it remarkably cor-
 roborates the Tone of the Intestines and Viscera. But it is
 expedient to exhibit such an evacuating Medicine thrice, or at
 least twice a Week, that the Sordes left in the Primæ Viæ by
 a bad Digestion may be eliminated; since otherwise they greatly
 contribute to cherish the Disorder, and augment its Force.
 And I have learned from repeated Experience, that alterative
 and evacuating Medicines of this kind are of singular Service
 in such Pains as recur periodically and at stated Hours.

When the *Primæ Viæ* are thus cleansed, ’tis not only ex-
 pedient but necessary to eliminate the peccant Serum, by such
 Decoctions as gently promote Transpiration and Sweat; such
 as those prepared of China-Roots, the Roots of Sarsaparilla,
 Succory, Liquorice, and Vipers-Grafs; the Wood and Bark
 of Sassafras, the Wood of yellow Sanders and Guajacum, to-
 gether with Figs and Currans. When the Disorder is deep-
 seated and inveterate, I have often found from Experience,
 that great Relief is afforded by crude Antimony, mixed with
 double the Quantity of the bezoardic and diaphoretic Powder,
 above described, and exhibited at proper Seasons, and in due
 Doses. Instantaneous Relief is also afforded by a celebrated
 diuretic and diaphoretic Liquor, which restores the Tone of
 the Parts, and is prepared of the Tincture of Tartar, the acrid
 Tincture of Antimony, the anodyne mineral Liquor mixed in
 due Proportions, and exhibited in proper Doses.

When a Rheumatism either of a fixed or wandering kind,
 seizes a scorbutic Habit, and discovers itself by evident Signs
 and Symptoms, the Cure is pretty long before it is perfected;
 for it is neither an expeditious nor an easy Task to restore the
 whole Mass of Lymph and Serum, when become intempe-
 rate, corrupted and impregnated with saline and excrementi-
 tious Parts, to its native Sweetness and Consistence. In this
 Case, the most efficacious Medicines are those of a diluting and
 demulcent kind, pretty copiously used and persisted in. The
 most considerable of this sort are sweet Whey, either impreg-
 nated with Manna, acidulated with Tamarinds, or mixed with
 the Juices of antiscorbutic Herbs; as also the temperate mine-
 ral Waters, such as those of *Selteran*, *Wildungen*, and *Tannstein-
 nen*; or in robust Constitutions, those of *Pyrmont* and *Egra*,
 mixed with half the Quantity of Asses or Cows Milk, and
 used with a proper Regimen, almost answer all the Intentions
 of Cure.

If a Rheumatism draws its Origin, as it frequently does,
 from the Remains of a *Lues Venerea* contained in the Mass
 of Blood, more powerful and drastic Medicines become neces-
 sary; for unless sudorific Decoctions of the Woods, heightened
 by an Addition of crude Antimony, or even of *Mercurius
 Dulcis*, are prudently used, the Cure is rarely brought about.

As for Topics for the gentle and successive Discussion of the
 Humour lodged in any particular Part, great Caution is neces-
 sary in the Choice and Exhibition of them, lest they should do
 more harm than good. If the Rheumatism is of the sangui-
 neous kind, it is most proper totally to abstain from them, and
 only to cherish the Parts affected with a moderate Heat of the
 Bed and other Coverings. Since by this means the peccant
 Matter is more mildly and happily exhaled, than it can be by
 the Assistance of various Topics. But if a thick, immove-
 able, and cold Humour is deeply and obstinately seated in any
 Part,

Part, and accompanied with a Sense of Cold, and a Constriction of the Pores, then Frictions with rough-warm Cloaths powerfully remove the tenacious Humour from its fixed Seat; and after these Frictions, Cupping-Glasses, either with or without Scarification, are to be applied; but 'tis to be observed, that Cupping-Glasses, with Scarification, applied to such painful Parts, even tho' the Incisions are pretty deep, procure an Evacuation of but very little Blood: A satisfactory Proof that the Ramifications of the Blood-Vessels are so contracted and compressed by the spasmodic Stricture, as to obstruct the Circulation of the Blood: So that 'tis highly probable that these Pains are not so much excited by a Redundance of Blood congested in these Parts, as by a viscid and acrid Humour stagnating in them.

When therefore the Humour is deep-seated, and produces violent Pains of the Limbs, we can hardly be entirely without external Remedies. But tho' for this purpose various Medicines are by different Authors highly extolled, yet I have found none more effectual than my nervous Liniment, which is prepared in the following Manner:

Take of *Anhalt* Water two Ounces, of *Peruvian* Balm two Drams, and of old *Theriaca* one Dram; Infuse and extract by Digestion: To the strain'd Liquor add of the Essences of Saffron, Castor and Nutmegs, each two Drams, and of Camphire one Dram; make into a Liniment, with which the pained Limbs are to be often anointed.

But if after a long protracted Pain, a Rigidity and Immobility, accompanied with a Stupor, remain, which Disorder is called a Paresis, the following Liniment used in the same manner, I have often found to produce admirable Effects.

Take of human Fat two Ounces, and of *Peruvian* Balm and Oil of Cloves, each two Drams, mix up into a Liniment according to Art.

Baths also, whether natural or artificial, are of singular Use in the Cure of these Disorders, when cautiously used: But they ought never to be used in the Beginning or in the Height of the Disease, but rather in its Decline, both to draw the Remains of the Disorder from their remote Seats, by moderate Sweats, and to soften the rigid Members, and corroborate such as are weakened by the painful spasmodic Strictures and Agitations. But I can from Experience assert, that I have found better Effects produced by none, than by a Bath prepared of the Waters of *Lauchstad* in *Meissen*, which contain a delicate *Crocus Mortis*, and are of a highly subtle and light Nature.

Tho' in Pains of the external Parts arising from a Redundance of thick Blood, and a Suppression of the salutary Excretions, copious Venesection, especially in the Beginning, is a powerful and divine Remedy; yet when a long-protracted Pain has so destroyed Digestion, a laudable Chylification and Strength, that the Body rather abounds with Serum than with Blood, or is already weaken'd by Age, Venesection is not to be used without the greatest Caution. Neither is Phlebotomy to be used when under the Paroxysm, accompanied with a febrile Commotion; Nature attempts Translations of the peccant Matter to the external Parts; at which time, just as in an Erysipelas, it is by no means expedient to disturb and counteract the salutary Work of Nature for the Patient's Relief.

I have often observed, that Venesection properly instituted before the *Æquinoxes*, excellently preserves Persons of constricted Habits, as also those of sanguineo-melancholic and sanguineo-choleric Constitutions, not only from catarrhus De fluxions, but also from rheumatic and arthritic Pains, to which they were before frequently subject; so that there is not a more powerful Remedy for preventing these Disorders, than Venesection, especially if the Patient uses due Exercise, and abstains from spirituous Liquors and a rich Flesh-Diet.

Tho' a Milk Diet is of singular Service in wandering arthritic Pains, and where the Disorder is produced by a subtle and bilious Acrimony, yet 'tis expedient to abstain from it, when the Vessels are too full, either of a stagnant or too serous Blood, and the Tone of the Stomach and Intestines is destroyed, lest by its Means Insarctions of the Viscera should be produced, and the Way pav'd for a succeeding Cachexy.

When a Suppression of the hemorrhoidal Discharge is the Cause of rheumatic or arthritic Pains, this Evacuation is with all Expedition to be recalled, tho' for this Purpose we are by no Means to use Venesection in the superior Parts, but in the Feet. Then we are to exhibit those Medicines which gently promote this Discharge, such as the *Pilula Avicennæ*, the *Pilula Berberianæ*, and others of a like Nature, interposing, at proper Intervals, the temperate and nitrous Powders, which allay the internal Heat, that greatly contributes to the Suppres-

sion of the Hemorrhoids. If these Measures should not prove effectual, but Gripes and Vomitings should accompany the external Pains, we are without Hesitation to apply Leeches to the Veins of the Anus, a Remedy which sometimes proves surprizingly efficacious.

Those who are subject to catarrhus, rheumatic, or arthritic Disorders, as also those who are disposed to spasmodic Commotions, or Congestions of the Blood and Humours, ought carefully to abstain from all strong, hot, diuretic, and diaphoretic Medicines; from acrid Purgatives, from all spirituous balsamic Substances, which throw the Blood into a preternatural Orgasm, from rich spirituous Liquors, after which the Urine is red and deeply tinged; and from all Malt Liquors, except of the medicinal Kind, such as that which does not oppress the Head, is freely discharged by Urine, and assists Digestion: But they ought for common Drink to use either pure Spring Water, temperate mineral Waters, or some grateful Decoction, which creates no loathing. And these Measures are still more carefully to be observed by those whose Juices are contaminated by scorbutic Purples, a very common Disorder in our Age.

When a violent and obstinate Pain for a long Time afflicts the inferior Parts of the Body, such as the Os Ischium, and the Os Coccygis, and the Patient is of a robust and vigorous Habit of Body, more powerful chymical Medicines, such as *Mercurius Dulcis*, Solar Precipitate well prepared, and medicinal Regulus of Antimony, which may also be added to sudorific Decoctions, are of singular Efficacy in removing the thick, tough, tartarous and vellicating Humour, from its deepest and most remote Seats.

When the Pains are so violent, which happens in delicate Constitutions, as to deprive the Patient of his Appetite and Sleep; and when neither Venesection, the nitrous and temperate Powders, nor any anodyne Liquor prove effectual to allay them, it is expedient gradually to pass from gentle Anodynes, such as the Emulsion and Syrup of white Poppy Seeds, to those of a more powerful Nature, such as the *Pilula Wildegansii*, the *Pilula Storckii*, the *Pilula de Stryace*, or even a Grain or two of Laudanum Opiatum, with an Addition of a small Quantity of the Extract of Saffron. But in other Cases, Opiates are not to be rashly used, since it has been often observed, that they render these Disorders so obstinate, as hardly to yield to the most efficacious Remedies; but create a great deal of Trouble both to the Patient and Physician.

In a beginning Rheumatism of the Scapulae, nothing is more efficacious than the Application of a Vesicatory between them; but if this Misfortune should happen in plethoric Habits, as I have often observed in Women about fifty Years of Age, when their Menses cease, great Relief is afforded by applying Cupping-glasses with Scarification, to the inferior Parts every Month.

As Persons naturally disposed to anomalous Motions of the Solids and Fluids, and to Translations or Congestions of the latter, are of a tender Habit, of a delicate Turn of Mind, and easily injured by the exorbitant Workings of Passions, which lay a Foundation for the Generation of these Disorders; so Tranquillity of Mind, sufficient Exercise, and an Abstinence from every Thing which has a Tendency to ruffle and discompose the Mind, are of great Use in the Cure of these Disorders. *Frederic Hoffman*.

The Rheumatism, a very frequent Disorder, bears a very near Affinity to the Arthritis, the Gout, and the Scurvy.

The preceding Causes of this Disorder are, a sanguineous Habit, accompanied with an acrimony of the Juices, a mature Age, luxurious Living, a sudden Admission of the Cold to the Body, when over-heated, the Influence of the Weather in the Autumn, an Obstruction of Perspiration, and a tough inflammatory State of the Fluids, to be discovered by a pleuritic Blood. It begins with a continual Fever, and creates a violent dilacerating Pain, which is greatly increased upon the smallest Motion, is long fixed in one Place, seizes the Joints of any of the Limbs, and is particularly incident to the Knees, the Loins, and the Coxendix. It also sometimes affects the Brain, Lungs, and Viscera, is accompanied with a Tumour and Redness of the Part, and comes and goes periodically.

If it remains for a considerable Time, and is increased, it often, after the most violent Pains, deprives the Limb of Motion, and produces an Anchylosis, which will hardly yield to any Medicine.

The immediate Cause of a Rheumatism seems to be so mild an Inflammation as not to degenerate into a Suppuration, in the lymphatic Arteries of the Membranes contiguous to the Ligaments of the Joints. It is cured by Venesection; repeated antiphlogistic Purgatives, every Evening after which a proper Narcotic is to be exhibited; by mild tepid Baths, and antiphlogistic Fomentations applied to the Parts affected; by drastic Vesicatories and Cauteries; by highly diluting and emolli-

ent Medicines; by attenuating Food; by Rest and the Warmth of the Bed; and towards the End of the Cure by Frictions with warm dry Cloths, together with the Use of Antiscorbutic Medicines.

A Lumbago or Rheumatism seizing the Loins, and sciatic Pains, are cured in the same Manner, tho' with somewhat greater Difficulty.

Hence appear the Reasons why this Disorder is so frequent, and its Appearances so various; why 'tis highly dangerous, when it seizes the Brain or Lungs; why in these Parts it is not discovered without the greatest Difficulty; and why the Use of hot Substances, or the too speedy Exhibition of Narcotics, must be dangerous in it. *Boerhaave Aphor.*

This Disease happens at any Time, but especially in Autumn, and principally affects such as are in the Vigour of Life. 'Tis generally occasioned by exposing the Body to the cold Air, immediately after having heated it by violent Exercise, or some other Way. It begins with a Chills and Shivering, which are soon succeeded by Heat, Restlessness, Thirst, and the other Concomitants of a Fever. In a Day or two, and sometimes sooner, there arises an acute Pain in some one or other of the Limbs, especially in the Wrists, Shoulders and Knees, which, shifting between whiles, affects these Parts alternately, leaving a Redness and Swelling in the Part last affected. In the Beginning of the Illness the Fever, and the abovemention'd Symptoms, sometimes come together; but the Fever goes off gradually, whilst the Pain continues, and sometimes increases, occasion'd by the Derivation of the febrile Matter to the Limbs; which the frequent Return of the Fever, from the Repulsion of the morbid Matter by external Remedies, sufficiently shews.

This Disease, when unattended with a Fever, is frequently taken for the Gout, though it differs essentially therefrom, as will easily appear to those who are thoroughly acquainted with both Diseases; and hence it is, perhaps, that physical Authors have not mentioned it; unless we should esteem it a new Disease. But however this be, it is at present very frequent, and though, when the Fever is gone off, it seldom proves fatal, yet the Violence of the Pain, and its long Continuance, render it no contemptible Disease. For in case of wrong Management, it frequently remains not only several Months, but some Years, and even during Life; though in this Case it is not equally painful, but has its periodical Returns, like the Gout; and the Pain may possibly go off spontaneously after it has been of very long standing. But in the mean time, the Patient is depriv'd of the Motion of his Limbs during Life, the Joints of the Fingers being contracted inwards, with stony Concretions as in the Gout, which rather appear in the internal Parts of the Fingers than the external, while the Appetite may be very good, and the general Health not amiss.

There is another Species of this Disease, though it is not generally esteemed of this kind, which may properly be called a rheumatic Lumbago. It is a violent fix'd Pain of the Loins, reaching sometimes to the Os Sacrum, and resembling a nephritic Paroxysm; only the Patient does not Vomit. For, besides the intolerable Pain near the Kidneys, the whole Conduit of the Ureters, even to the Bladder, is sometimes affected with the same, though in a less Degree. I have been formerly led into an Error hereby, as imagining it to arise from some Gravel lodged in these Parts; whereas, in reality, it proceeds from the peccant and inflamed Matter of the Rheumatism, which affects only those Parts, leaving the rest of the Body free. Unless this acute Pain be removed in the same Manner as the former Species, it continues as long, and proves equally violent; so that the Patient cannot lie in Bed, but is forced either to leave it, or sit upright therein, and be perpetually moving his Body backwards and forwards.

Since both the Kinds of this Disease seem to arise from Inflammation, as appears from their Concomitants just mentioned, and especially by the Colour of the Blood taken away, which exactly resembles that of Persons in a Pleurisy, which is universally allowed to be an inflammatory Disease; so I judge that the Cure ought to be attempted only by Bleeding, the Heat of the Blood being in the mean time abated by cooling and incrassating Medicines, along with a proper Regimen.

Accordingly, as soon as I am called, I direct ten Ounces of Blood to be immediately taken away from the Arm of the Side affected, and prescribe a cooling and incrassating Julap, nearly after the following Manner.

Take of the distilled Waters of Lettice, Purslain, and Water Lilly, each four Ounces; Syrup of Lemons, an Ounce and Half; Syrup of Violets, an Ounce; mix them together for a Julap, of which let the Patient drink at Pleasure; or of the following Emulsion.

Take seven blanched Sweet Almonds; of the Seeds of Melons and Pumpions, each Half an Ounce; the Seeds of white Poppies, two Drams; beat them together in a Marble Mortar, then pour on, by Degrees, a Pint and Half, of Barley-Water; mix them well, and, when strained, add two Drams of Rose-Water, and Half an Ounce of white Sugar.

To ease the Pain, I order a Cataplasm, prepared of the Crumbs of white Bread and Milk, impregnated with Saffron; or a Cabbage-Leaf to be applied to the Part affected, and frequently renewed. With respect to Diet, I enjoin a total Abstinence from Flesh, and even the thinnest Flesh-Broths, substituting in their Place Barley-Broth, Water-Gruel, Panada, and the like. I allow only small Beer for Drink, or which is more proper, a Pufan prepared of Pearl-Barley, Liquorice, Sorrel Roots, and the like, boiled in a sufficient Quantity of Water. I, also, advise the Patient to sit up some Hours every Day, because the Heat which proceeds from always lying in Bed, promotes and augments the Disease.

The next Day I repeat the Bleeding in the same Quantity; and in a Day or two after, as the Strength will permit, I bleed again; then interposing three or four Days, as the Strength, Age, Constitution of the Patient, and other Circumstances indicate, I bleed a fourth Time, which is generally the last, unless too hot a Regimen has preceded, or heating Remedies have been exhibited without Necessity. But the Use of Opiates requires more frequent Bleeding; and therefore, though the Pain be ever so violent, during the whole Course of the Disease, yet when I intend to effect the Cure solely by Bleeding, I judge it highly necessary to refrain from Opiates, because the Disease is fixed thereby, and does not yield so readily to Bleeding; so that where such Medicines are given too frequently, Bleeding must in consequence be oftner repeated than is otherwise necessary. Besides, in the Height of the Disease they do not answer the Expectations we have conceived of them.

While the abovementioned Remedies and Regimen are carefully continued, I inject Clysters made of Milk and Sugar, between times on the intermediate Days of Bleeding; earnestly recommending the exact Observance of these Directions, for at least eight Days after the last Bleeding; and then I prescribe a gentle purging Potion to be taken in the Morning, and in the Evening a large Dose of Syrup of white Poppies in Cowslip Flower Water; whereby a Check is put to the tumultuary Motion of the Blood, which might otherwise endanger a Relapse. This being done, I allow the Patient to return by Degrees to his customary way of Living, with respect to Diet, Exercise, and Air; but at the same time caution him to refrain, for a considerable time, from Wine, and all spirituous Liquors, salt or high-season'd Flesh, and in general from all Food of difficult Digestion.

After having repeated Bleeding, as above specified, the Pain is greatly abated, though it does not go quite off; but as soon as the Strength returns, which Bleeding had greatly impair'd, the Symptoms will vanish, and the Patient recover perfectly; especially upon the Approach of the following Season of the Year, which will be more conducive to recruit the Strength, than that wherein he was first attacked with the Disease.

But though this, or a similar Method, seasonably used in the Beginning of the Disease, generally proves successful; yet it frequently happens, when the Cure is attempted by a contrary Procedure, that the Patient is severely afflicted during Life with flying Pains, which are sometimes violent, and at others more gentle; whereby the Unskilful are easily deceived, and they are commonly reckoned Symptoms of the Scurvy.

But it is here to be observed, that when the Rheumatism hath taken deep Root by a Continuance of some Years, it is improper to repeat Bleeding at such short Intervals as in the Beginning of the Disease; and better to interpose some Weeks between the Operations. By these Means the morbid Matter will either be quite exhausted, or at least in so great a Degree, that the Remains of it may be carried off entirely, by an Issue made in one of the Legs, and exhibiting a proper Quantity of some volatile Spirit, every Morning and Evening, in Canary.

But though there is a remarkable Difference between the true Rheumatism and the Scurvy, it must nevertheless be own'd, that there is another Species of the Rheumatism, which is near a-kin to the Scurvy: For it resembles it in its capital Symptoms, and requires nearly the same Method of Cure; and therefore I call it a scorbutic Rheumatism. The Pain sometimes affects one and sometimes another Part, but it rarely occasions a Swelling, as in the other Species, neither is it attended with a Fever. It is, also, a less fixed Pain, and accompanied with irregular Symptoms; sometimes it affects one Limb, and sometimes another; sometimes it only attacks the internal Parts, and causes Sickness, which goes off again upon

the Return of the Pain of the external Parts. In this manner the Patient is alternately afflicted, and the Disease proves of long Duration, like those Distempers which are esteemed most chronic. It principally attacks the Female Sex, and Men of weak Constitutions; so that I should have concluded it ought to be referred to the Tribe of hysteric Disorders, had not repeated Experience taught me, that it would not yield at all to hysteric Remedies.

Such, likewise, as have gone through a long Course of the Peruvian Bark, are subject to this Disease, which, by the way, is the only ill Effect I have ever observed from the Use of this Medicine. But however it be, this Disease, whether it proceeds from this or any other Cause, is easily conquered by the Use of the following Remedies, which I should have conceal'd, had I not preferred the Good of Mankind to any private Interest.

Take of the Conserve of Garden Scurvy-Grass, 2 Ounces; Conserve of Wood-Sorrel, an Ounce; compound Powder of *Arum*, six Drams; Syrup of Oranges, enough to make the whole into an Electuary; two Drams of which is to be taken three Times a Day, for a Month, drinking after it three Ounces of the following distilled Water.

Take of Garden Scurvy-Grass, eight Handfuls; of Water-Cresses, Brook-Lime, Sage, and Mint, each four Handfuls; the Peel of six Oranges; Nutmegs bruised, Half an Ounce; infuse them in six Quarts of Mum, and draw off only three Quarts for Use, in a common Still.

A CONSUMPTION FROM A RHEUMATISM.

In a Gout and Rheumatism, especially those of the legitimate and humoral Kind, which draw their Origins from an acrid Ferment supply'd by the Nerves, there is so manifest a Colliquation of the whole Mass of Blood, that we have no Reason to wonder if a Phthisis should arise from these Disorders, especially when they are obstinate, chronic, or subject to recur frequently. Hence we may observe, that Rheumatic Pains, arising from a contracted Cold, seldom or never invade the Joints, without being accompany'd with a pulmonary Cough. And as I observ'd that the illustrious Mr. *Orlando Bridgman*, Mr. *Philips*, Mr. *Tibs*, and a great many others, have at last died either of a Phthisis or Asthma, after long-continued arthritic and rheumatic Paroxysms; so I have, also, sometimes remark'd, that an acute and fatal Phthisis succeeded the very first Paroxysm of the Rheumatism.

It sometimes happens that a Phthisis succeeding the first Access of the Rheumatism is of the acute Kind, since it draws its Origin from the Colliquation of Humours in the acute Paroxysm of the humoral Rheumatism. As it, therefore, partakes of the Nature of a common Phthisis, its Cure ought to be attempted in the same manner; that is, by lubricating and incrassating Substances, Opiates and other pulmonary Medicines. And even in Cases where there is neither a troublesome Cough, nor a Difficulty of Breathing, I use, and that with great Success, in all Paroxysms of the Rheumatism, to prescribe large Quantities of *Apozems* and *Eclegmas*, of a pectoral, lubricating and incrassating Nature, not only with a View to give a proper *Crafsis* and Softness to the Blood; but, also, in order to guard against a *Phthisis*, which frequently acknowledges a Rheumatism for its Cause.

When a Phthisis arises either from a Gout, or an inveterate and often recurring Rheumatism, it is plainly of the chronic Kind, and may happen for a long Tract of Years gradually to injure the Lungs and other Parts, destin'd for the several Purposes of Respiration. And, indeed, a Phthisis of this Kind partakes of the Nature of an Asthma; since, by reason of the Viscidity of the Phlegm, it is more frequently accompany'd with a Difficulty of Breathing than an obstinate Cough, and seems rather to arise from a *Stupor* of the nervous System, than a Colliquation of the Humours.

But this asthmatic Phthisis has, in my Opinion, something singular in its Nature, since the Choice of Air has not the full Influence upon it; for I have observ'd, that Patients labouring under this Species of Phthisis, even though they were asthmatic, breath'd as free and easy in an Air that was damp, and impregnated with the Smoke of Coals, as in that which was pure and serene. Hence it happens, that lubricating and expectorating Medicines are, at least, of no Service in this Case; whilst, at the same time, Opiates and incrassating Substances produce the most fatal Effects. Greater Relief is justly to be expected from frequent and copious Exhibitions of the Spirit of Harts-horn, Sal-Ammoniac, chymical Oil of Juniper, and such other Medicines as rouse the Spirits and comfort the Nerves, than from any Opiates or pectoral Medicines whatever.

The rheumatic Pains and Swellings are generally lessened in proportion as this Asthmatic Phthisis advances and gains Ground. And indeed a true and legitimate humoral Rheumatism degenerates into a nervous one, accompanied with flitting Pains, without any apparent Swelling, long before it proves mortal.

A rheumatic Phthisis, arising from a chronic Rheumatism, and invading old People, is, for ought I know, altogether incurable; since 'tis a sure Sign that weakened Nature is now no longer able to maintain the laborious Struggle, and grapple with so formidable an Enemy as the Rheumatism.

Gentle Vomits, repeated at proper Intervals, especially if they happen to work easily, and are not called in too late, contribute very much to the Cure of this Species of Phthisis, since they prove Deobstruents to the Brain and Nerves, allay the rheumatic Pains, and lessen the Stupor and Rigidity of the nervous System in general; by which Means the procatactic Cause, or Fomes of this kind of Phthisis is in a great Measure removed, or at least diminished.

Venesection, in the Beginning of this Disorder, before the Strength of the Patient is too much exhausted, is also of singular Service, not only by lessening the hectic Heat, and the rheumatic Pains, but also by proving a grateful Relief to the Difficulty of Breathing.

But when the Disease is considerably advanced, and the Patient labours under an universal and preternatural Languor, I have often observed, that Venesection not only gives an additional Shock to Nature, already too much weakened, but also increases the Difficulty of breathing. And indeed I have not the least Reason to doubt, but this asthmatic Phthisis frequently proceeds from profuse and often repeated Venesections, under the Paroxysms of a Rheumatism; since by that Means, as well as by other immoderate Hemorrhages, the due *Crafsis* of the Blood is destroyed, and its whole Mass impoverished.

I have also had many Proofs of the singular Efficacy of the Peruvian Bark in extinguishing the hectic and colliquating Heat, excited and left in the Mass of Blood, by the Force and Violence of the Rheumatism; and indeed if this Heat is not removed and carried off, either by the Efforts of Nature, or the Assistance of Art, it paves a direct Way, and lays a sure Foundation for a pulmonary Phthisis.

I have also observed, that for this very Reason, chalybeate Medicines, and especially chalybeate mineral Waters, provided they were drunk betimes, and pass'd off freely and copiously by Urine, were of singular Use in the first Stages of this Distemper, for procuring a Respite, at least, if not for perfecting the Cure.

Hot Baths, and artificial Baths, used before the Patient's Strength is too much exhausted, have generally a lucky Influence upon this Species of Phthisis in its first Stages, by removing the Obstructions of the Fibres.

In the Beginning of this Distemper, a Milk Diet is also of singular Service, by diminishing the Heat, and allaying the preternatural Acrimony of the Blood. But I must own it is not so proper when the Disease is advanced, and a Difficulty of breathing already brought on; because, in that case, it generally renders the Phlegm impacted in the *Bronchia* more glutinous than it was before. Nor perhaps is it a groundless Conjecture, that the too plentiful Use of Milk in Rheumatisms, very much disposes the Patient to an asthmatic Phthisis.

C A S E I.

One Mrs. Laurence, about thirty five Years of Age, happening, when big with Child, to be seized with an universal Rheumatism, was so unfortunate as to commit the Care of her Health to a certain Apothecary for some Months, till at last considering her Complication of Symptoms, her Cough, her Difficulty of breathing, her hectic Fever, her Languor, and other Symptoms of a like Nature, it became uncertain whether she was to fall a miserable Sacrifice to a Rheumatism or a Phthisis, since her Rheumatism, which was formerly of the legitimate Kind, had by this Time degenerated into a nervous one, accompanied with a certain Rigidity and flitting Pain of the Joints, but without any Tumour or Swelling. When the Patient was in this deplorable State, I was called on the 25th of *October* 1686; and in order to allay the rheumatic and hectic Heat of the Blood and Spirits, together with the hysteric Indisposition arising from them, I prescribed her the following Electuary and Julep.

Take of the old Conserve of red Roses and of Hipps, strained through a Sieve, of each an Ounce, Lavender Flowers powder'd, Magistery of Coral; of each a Dram, of Syrup of Corals a sufficient Quantity, mix them, and make an Electuary, of which let her take the Quantity of a Nutmeg every six Hours.

Take

Take the Waters of Rue, and black Cherries, of each four Ounces; of Barley-Cinnamon Water three Ounces, the compound Waters of Piony, and of Briony, of each an Ounce and half; of prepared Pearl a Dram and half; of fine Sugar a sufficient Quantity to sweeten them; mix them, and make a Julap, of which let her take four or five Spoonfuls after every Dose of the Eleſtuary, and likewise at other Times when she has a Mind to it.

To help the Pains and Stiffneſs of her Joints, I ordered that ſame Night bliſtering Plaſters to be applied to the Inſide of her Arms, near the Arm-Pits; and I tried a gentle Evacuation by Stool, with two Ounces of Tinctura Sacra, which ſhe bore well. I ordered the following Paregoric Draught to be taken when ſhe was to go to Reſt.

Take of red Poppy Water three Ounces, Barley-Cinnamon Water an Ounce, of compound Piony Water two Drams, Salt of Wormwood ſix Grains, Syrup of Meconium ſix Drams, mix them, and make a Draught.

October 28. I gave her the following Vomit.

Take of the Infuſion of *Crocus Metallorum* an Ounce, Syrup of Violets two Drams; mix them, and let them be given for a Vomit about five o'Clock in the Afternoon, with due Care and Management; and (if it be neceſſary) let her take between her Vomiting a Scruple of Salt of Vitriol, twice or thrice in a Draught of warm Poſſet Ale.

I ordered alſo the following Paregoric Draught to be taken when the Vomit had done working.

Take of Mint-Water half an Ounce, Dr. Stephen's Water three Drams, Barley-Cinnamon Water, Alexiterial Milk Water, of each an Ounce, of Diacodium ſix Drams; mix them, and make a Draught.

From the Vomit ſhe found an univerſal Relief, and that not only from the Symptoms of her Conſumption, but alſo of her Rheumatism. And therefore, after three Days, I ordered the Repetition of the Vomit; and then I endeavoured to extinguiſh the heſtic Flame, which had been kindled in the Blood by the Rheumatism, and thereby to take Care of her Lungs, which had been injured by it, in the Manner following.

Take a ſufficient Quantity of the Ingredients of the pectoral Decoction, of the Peruvian Bark an Ounce, Baſam of Tolu a Dram; boil them in a ſufficient Quantity of ſpring Water, to a Pint and half; to the Liquor, when it is ſtrained, add diſtilled Treacle Water, the Baſamic Syrup, of each an Ounce and half; mix them, and make an Apozem, of which let her take four Ounces three Times a Day for ſix Days together, taking always in the Night-Draught fifteen Drops of Helmont's liquid Laudanum, if any Gripes, or Loofeneſs, or want of Reſt ſhould trouble her.

When ſhe had done uſing the Apozem, I ordered the emetic Potion to be repeated, and afterwards, *Novemb. 13.* I preſcribed the following Pills.

Take of the *Peruvian* Bark, finely powdered, an Ounce, Mucilage of Gum Tragacanth, a ſufficient Quantity. Mix them, and make them into Pills of a middle Size, to be gilt; of which let her take ſix Morning and Evening, every Day.

With the Uſe of theſe ſhe grew perfectly well, being evidently freed not only from the Pains and Stiffneſs of her Limbs, but likewise from her Cough, Difficulty of Breathing, Oppreſſion, Fever, and all the other Symptoms of a pulmonary Conſumption. Her Appetite alſo returned, and at length ſhe likewise recovered her Strength, and her Fleſh, and ſtill enjoys very good Health, without any Return of her Rheumatism or Conſumption. *Morton.*

RHEXIS, ῥῆξις, from ῥήγνμι, to break, a Rupture, in *Hippocrates*, 5 *Aph.* 15. ſignifies the breaking of an Abſceſs; and alſo 6 *Epid. Sect. 6. Aph.* 24. In other Places it is applied to a Rupture of ſome Blood-Veſſel, whence an Hæmorrhage is occaſioned.

RHICNOSIS, ῥιχνωσις, from ῥιχνός, rugous or wrinkled, is a Corrugation of the Skin, attended with an Extenuation of the Body, and oppoſed to *Ectasis*, ἔκτασις, a Diſtention of the Skin from Repletion.

RHIGOS, ῥίγος, *Lat.* Rigor, a Rigor, is defined by *Galen*, *Lib. de Trem. & Palp. &c.* a Perfrigeration, with an Uncalineſs,

and irregular Agitation and Concuſſion of the whole Body. This is the Definition of a morboſe Rigor, ῥίγος νοσίδις, or ἀνὸ νοσίδις, as he calls it, *Com. 3. in 1 Epid.* or ῥίγος νοσίδις, as it is called by *Hippocrates*, *Lib. 4. de Morb.* when the Diſorder ariſes, or has its Original in the internal Parts, and proceeds from no external violent Cauſe, but invades and comes upon the Body, as it were ſpontaneouſly; for Rigor in a more univerſal Senſe, or as it ſignifies any uneasy Perfrigeration, may be incident to Perſons in Health. That a Rigor is not a Senſe of Perfrigeration, with a Trembling, is largely proved by *Galen* in the Book above cited, where he gives the diſtinguiſhing Characters of a Rigor, and a Tremor, or Trembling; and at laſt concludes, that a Rigor is a ſtrong and urgent Senſe of a Refrigeration of the natural Heat. *Hippocrates*, alſo, *Lib. 1. de Morb.* ſays, that a Rigor proceeds from a Refrigeration of the whole Body, occaſioned by a Refrigeration of the Blood; and *Lib. 4.* he makes a Rigor to take its Riſe from a violent Irruption of acrimonious Humours into ſome Part, and a vehement Conflict of the jarring Humours, attended with a Concuſſion of the whole Body; and ſuch a Rigor as this was always accounted by the Ancients an Attendant upon a Fever, as appears from *Hippocrates*, *Lib. 1. & 4. de Morbis*; for a ῥίγος ἀνὸ νοσίδις, or a Rigor not ſucceeded by an intemperate or feveriſh Heat, was, as *Galen* ſays, *Lib. 5. de Sympt. Cauſ.* unknown to the ancient Phyſicians, on account of their extremely frugal Way of Living, being no more than a Senſation of a kind of Horror, and having very little of the true Rigor in it. This owes its Original to a vitreous Phlegm, and cold and crude Juices, Intemperance in Diet, a lazy and idle Liſe, and to the frequent Uſe of Bathing; and is very familiar to the Female Sex, as *Galen* in many Places aſſures us. *Hippocrates*, *Lib. 1. de Morb.* makes a Horror to be a weak kind of Rigor; and *Celfus*, *Lib. 8. Cap. 2.* uſes the Word Horror for Rigor, from 4 *Aph.* 58. where he ſays, “ That a burning “ Fever, which the *Greeks* call *καυσώδης*, *Cauſodes*, meets with a “ Solution from the ſudden Coming of a Horror.” The *Latins* alſo call thoſe Shiverings and Shakings, which affect the Patient under the Fits of Fevers, indifferently by the Name of *Horrores* or *Rigores*.

Rigor is alſo taken in another and quite different Senſe, for an inflexible Hardneſs and Tenſion of the Nerves and Muſcles, which ſeems more properly expreſſed by *Rigiditas*.

RHINARION, ῥινάριον, the Name of a ſineclic or deterſive Collyrium, deſcribed by *Paulus*, *Lib. 7. Cap. 16.*

RHINE. The ſame as *SQUATINA*, which ſee.

RHINEMA, **RHINISMA**, ῥινημα, ἡ ῥινημα. Scrapings, Shavings, Filings, and the like. *Hippocrates*, *Lib. 1. περὶ γυναικ.* and *Galen*, *Lib. 3. κατὰ τόπον*.

RHINENCHYSIS, ῥινηγχυσις, from ῥίς the Noſe, and ἵγγω, to infuſe; an Infuſion into the Noſtrils, which is performed by an Inſtrument called

RHINENCHYTES, ῥινηγχυτής, a Syringe for the Noſtrils, mentioned by *Galius Aulicianus*, *de Morb. Chron. Lib. 2. Cap. 4.* and *Lib. 3. Cap. 2.* where the vulgar Reading is *Rinenchytos*; but *Rhadius*, *ad Scrib. Larg.* reads *Rhinenchytes*.

RHINION, ῥίνιον, the Name of a Collyrium in *Galen de C. M. S. L. Lib. 4. Cap. 7.* and of another deſcribed by *Celfus*, *Lib. 6. Cap. 6.* for a dry Ophthalmy, and ſcabrous Eyes. *Caſtellus*.

RHINOCEROS, Offic. Schrod. 5. 305. Raii Synop. A. 122. Mont. Exot. 5. Aldrov. de Quad. Biſul. 878. Charlt. Exer. 12. Geſn. de Quad. 842. Jonſ. de Quad. 66. *Abada ſive Rhinoceros*, Bont. **THE RHINOCEROS**.

The Part in Uſe is the black, ſiſſile, pyramidal Horn, a Cubit in Length, of the Figure of a Buſſalo's Horn, and perfectly ſolid, or without Cavity.

This Horn is commended againſt contagious Poisons, and other Diſtempers which require Sudorifics, and therefore in ſuch Caſes may ſupply the Want of the Unicorn's Horn. *Schroder. Monti* writes that the Horn is alexipharmic, cardiac, ſtomachic, diaphoretic, and a Sweetner.

Though there are various Kinds of Quadrupeds with one Horn, deſcribed by Authors, I take them all, ſays *Dale*, to be fictitious, except the *Rhinoceros*, which is the only Unicorn, or one-horn'd Quadruped, and perhaps the very ſame with that of the Ancients, whoſe Horn *Ælian* aſſirms to be black. And *Schroder*, as well as others, aſcribe the Virtues ſaid to be in the Horn of the Unicorn, to the Horn of the *Rhinoceros*.

RHINOPTES, ῥινοπτης, from ῥίς, or ῥίς, the Noſtrils, and ὀπται, to ſee, is a Perſon who from a Diſeaſe in the great Canthus of the Eye, which has laid open the Paſſages to the Noſe, is enabled to ſee through the Noſtrils; an Inſtance of which we have in *Rungius de Viſus Sympt.*

RHINOS, ῥίς, in *Erotian*, is expounded by *ἡγεα*, the Skin.

RHIPIDION, ῥίπιδιον. A Fan. *Mofchion*.

· RHIPTASMOS, *ῥιπτασμός*, from *ῥίπτω*, to toss or cast. A Tossing and Restlessness, a Symptom very frequent in Fevers. See ALYSMOS.

RHIZA, *ῥίζα*. A Root.

RHIZAGRA. The Name of a Chirurgical Instrument, for extracting the Roots or Stumps of Teeth.

RHIZIAS, *ῥιζιάς*. A Liquor collected from Roots by Incisions made therein. *Silphium* is particularly thus called.

RHIZOPHORA. The Name of a Vegetable, of which *Boerhaave* mentions two Species; the first of which is the *Rhizophora*; *Indica*; *Bryonia nigrae similis*; ad foliorum ortum verrucosa. *Plukn. Phys. T. 220. P. 50.*

The second is the

Rhizophora; *Americana*.

RHIZOTOMUS, *ῥιζοτόμος*. The same as RADICISECA.

RHOA, *ῥοά*. The Pomegranate.

RHODAPSINTHATON, *ῥοδαψινθατον*. A Preparation of Roses. *Ætius* describes several of these, *Tetrabib. 4. Serm. 4. C. 117.*

RHODELÆUM. Oil of Roses.

RHODIA RADIX, *Offic. Ger. 426. Emac. 532. Raii Hist. 1. 690. Park. Theat. 729. C. B. P. 286. J. B. 3. 683. Telephium luteum minus, radice Rosam redolente, Hist. Oxon. 3. 468. Anacamperos radice Rosam spirante major, Tourn. Inst. 264. Boerh. Ind. A. 269. Raii Synop. 3. 269, ROSEWORT.*

It grows on hilly Places, and flowers in the Spring. The Part in Use is the tuberous and brittle Root, which is of a dark-brown Colour on the Outside, and whitish within, and of a rosy Smell and Taste. This Root is heating and drying, and cephalic; its principal Use is in Pains of the Head. *Dale.*

RHODIACON, *ῥοδιακόν*. The Name of a Plaister described by *Galen* from *Asclepiades. L. 2. de Comp. Medic. p. G. Cap. 17.*

RHODIDES, *ῥοδιδες*. Troches of Roses, described by *Dioscorides. L. 1. C. 131.*

RHODINON, *ῥοδινον*. Oil of Roses. Or Vinegar of Roses.

RHODITES VINUM. Wine impregnated with Roses; the Manner of preparing it is described by *Dioscorides, L. 5. C. 35.*

RHODIUM LIGNUM. See ASPHALTHUS.

RHODODAPHNE. The same as RHODODENDRON.

RHODODENDRON. The Oleander, or Rose-Bay. See NERIUM.

RHODOMELE. Honey of Roses.

RHODOMELON. *ῥοδομήλον*. A Confection of Roses, Quinces and Honey.

RHODON, *ῥόδον*. A Rose. Sometimes it imports the Oil of Roses.

RHODOSACCHARUM. Sugar of Roses.

RHODOSTACTON, *ῥοδοστακτόν*. Honey of Roses. *Paulus Aegineta. L. 7. C. 17.*

RHODOSTAGMA, *ῥοδοστάγμα*, from *ῥόδον*, a Rose, and *στάζω*, to distil. Dr. *Freind* remarks, that *Actuarius* is the first Greek Author who makes mention of distilled Liquors, as the *Rhodoestagma*, and *Intybestagma*, which the Translator calls *Stillatitius Liquor Rosarum*, & *Aqua quam Intybus stillavit*; and which are by the Author used as Ingredients in a Julap. *Gesner* indeed contends, that these Liquors here specified, are not prepared by any chymical Process, and are nothing more than Syrups of those Plants, just like the *Rhodoestacton* described in *Paulus. M. le Clerc*, following the Opinion of *Langius*, thinks otherwise; and has shewn very plainly, that the stillatitious Liquor of Roses mentioned by *Actuarius*, is very different from the *Rhodoestacton* of *Paulus*, which is only made with the Juice of Roses and Honey boiled up together. His Judgment seems to be very right in this Matter; and as a further Proof of it, give me leave to observe a Passage or two in *Nicolaus Myrsinus*, one of the last of the Greeks, and who often copies from our Author. He describes the *Rhodoestacton* of *Paulus*, only with this Difference, that he says it may be made with Sugar, as well as with Honey: Then he describes the *Phlorasatum*, as it is delivered down to us by *Ætius* and *Paulus*, a Medicine much like the former, with this Variation alone, that Water is added to the Roses: And after that, he proceeds to give this very Julap in *Actuarius*, which proves, at least, that he thought it a Preparation very distinct from the other two. And it must appear very evident to any one who considers the Composition itself, that it is a very absurd one, unless the distilled Rose-Water be meant; for otherwise it is just a double Trouble, and making the Medicine twice over, with the very same Ingredients, to little purpose.

RHOE. The same as RHUS.

RHOEAS, *ῥοῖα*, or *ῥοῖα*. from *ῥῖναι*, to flow, or *ῥῖναι*, to draw, is a Flux of the Eyes, occasioned by a Diminution of the Flesh

in the greater Canthus, or Angle of the Eye. *Galen, Com. 2. in 6 Epid.* makes four Kinds of it, according to the different Causes; for either it is occasioned, he says, by the Closure or Obstruction of the Passage at the great Canthus, or by a Collection of so much Excrement in the Eye, that this Passage, by reason of its natural Straitness, is incapable of receiving it, and therefore discharges it. Or thirdly, it may proceed from the Stopping of the Passage by a Cicatrix growing therein, as it happens after a Section of the *Encanthides*. [See ENCANTHIS.] Or lastly, from any other Ulceration of the Part. The Author of the *Definitiones Medicæ*, defines a *Rhoeas* to be a Consumption of the Flesh in the Angles of the Eye, occasioning a Flux of the Tears. And in the *Isagoge* ascribed to *Galen*, we read that the Eye is affected with a *Rhoeas*, when either the *Canthus*, by some unknown Cause, is perverted, or by a chirurgical Operation so raised, as to be incapable of containing the Tears, or preventing their Efflux.

According to *Ætius*, in *Tetr. 2. Serm. 3. Cap. 88.* the Disorder by the Greeks called *Rhoeas*, which is a Diminution or Decrease of the Flesh in the large Angle of the Eye, happens when by an Exulceration, or the Removal of a Pterygium, or the natural Flesh, the Angle of the Eye is removed, falls down on the Cheek, and becomes incapable of retaining the Tears. This Disorder also sometimes happens from an ill-cured *Ægilops*. Those Persons are, also, called *Rhoeades*, who in Consequence of continual Defluxions of the Eyes, perpetually discharge Tears. Those, the Angle of whose Eye is totally removed, are to be cured by Medicines of a corroborating and consolidating Quality. But if a Callus is induced, the Parts must be stimulated by some more acrid Medicines. But manual Operation is also necessary for the Cure of this Disorder; for a Ligature is to be applied about the Neck, and some Blood-Vessel about the Nose, are to be marked out and afterwards opened with a two-edged Knife. Then a Sponge being applied to the Eye, a triangular Caustery is to be applied to the Part, tho' not so deep as the Bone, but only so as to affect the Skin and Wound. Afterwards a Lentil with Honey is to be applied. When the Ulcers are sufficiently clean, the Eye is to be kept open till the Angle is filled with laudable Flesh, for fear of a Concretion. In the Cure of this Disorder, *Allum* and *Turpentine* are of singular Service.

RHOGE, *ῥογή*. A Rupture, Fracture, or Fissure.

RHOGE, *ῥογή*. A Snoring.

RHOICOS, *ῥοικός*. Fluid. An Epithet for Bodies abounding with Humidity.

RHOIDARIUM, *ῥοιδάριον*. The Name of a Medicine described by *Ætius, Tetrabib. 1. Serm. 2. C. 68.*

RHOITES, *ῥοίτης*. A Sort of Rob of the Juice of Pomegranates, described by *Dioscorides, L. 5. C. 34.* But a Confection made of three Sextaries of the Juice of Pomegranates, and one of Honey, boiled to the Consumption of one Third, is thus called by *Paulus Aegineta. L. 7. C. 15.*

RHOMBOIDES MUSCULUS.

This Muscle is a thin, broad and obliquely square fleshy Plan, situated between the Basis of the Scapula and the Spina Dorfi; and it is from its Figure that it has been termed *Rhomboides*.

It may be divided into two Portions, one superior, the other inferior, which sometimes appear separate. The superior Portion, which seems in some Subjects to be made up of two, is fixed by an Insertion wholly fleshy in the two or three lowest spinal Apophyses of the Neck, and partly in the posterior cervical Ligament. The inferior Portion is fixed by a tendinous Plane in the three or four uppermost spinal Apophyses of the Back.

These two Portions, of which the inferior is by much the broadest, being united, are inserted in the Edge of the Basis Scapulæ from the small triangular Space to the inferior Angle, the superior Portion covering a small Part of the Insertion of the *Angularis*.

This whole Muscle is covered by the *Trapezius*, and covers immediately the *Serratus Possicus Superior*, being joined to each of these Muscles by a filamentary or cellulous Substance.

According to the Insertions and Direction of the *Rhomboides*, its general Use must be to draw backward and upward the subspinal Portion of the Basis Scapulæ.

It is also a Moderator to the *Trapezius* and *Serratus Major*, when they raise the Shoulder or carry the *Acromium* upward; and it brings the Scapula back to its natural Situation, when the Action of these Muscles ceases.

It may draw the Scapula directly backward, if the inferior Portion of the *Trapezius* acts at the same time. For as this Portion draws obliquely downward and toward the Spina Dorfi, and the *Rhomboides* obliquely upward and toward the same Spine; the joint Action of both must produce a Motion directly backward, as it happens when we pull back both Shoulders equally, in order to disengage them.

It

It may also, together with the radiated Portion of the *Serratus Major*, draw the Basis of the Scapulæ directly backwards. This, however, is but an inconsiderable Motion, and not so easy as the rest; for the *Serratus Major* contributes to it only in proportion to the Action of the *Rhomboides*, which is but very small; and in this Case the *Acronium* can rise but a very little Way. *Winslow's Anatomy*.

RHOMBOS, ῥόμβος. A Species of Bandage mentioned by *Galen*, thus called from its Figure.

RHOMBUS. A Fish called a Turbot.

There are several Sorts of Turbot, of different Sizes; some have Prickles on their Head, and towards the Tail, and others none. They have a delicious Taste, and are best while they are fresh, firm, white, tender and juicy. Some call it *Phasianus Aquaticus*, the Water-Pheasant, because its Taste resembles that of a Pheasant. It contains a just Proportion of oily and volatile saline Principles, and has but few viscous and gross Juices. It is, therefore, nourishing and easy of Digestion; is reckoned good against the Distempers of the Spleen, when applied thereto, and produces no ill Effects, unless immoderately used. It agrees at all times with any Age and Constitution.

There are very large Turbots in the Ocean and Mediterranean. *Rondeletius* says, he had seen some which were five Foot long, four in Breadth, and a Foot thick. This Fish sometimes lives about the fat Soils, and near the Shores, but generally at the Mouths of Rivers, where it watches the small Fishes, on which it feeds, especially the Cray-Fish. *Lemery on Foods*.

RHOMMA, ῥίμμα. The same as **ROPHEMA**.

RHONCHOS, ῥήγχος. Snoring or Snorting; from ῥήγχο, to snore.

RHOPALOSIS, ῥοπαλῶσις. A Disorder of the Hair, which should seem to resemble the *Plica Polonica*, as it consists in a Matting or Concretion of the Hairs together. *Galen Defin*.

RHOPE, ῥοπή, from ῥίπω, to verge, or incline. A violent Tendency of the Humours to any particular Part.

RHOPHEMA, ῥόρημα, from ῥορίω, to sup. This Word is frequently used by *Hippocrates*. *Cælius Aurelianus* translates it, *Sorbilis Cibus*. It is the Cremor of Ptilan, that is the Pulp of Barley decorticated and boiled.

RHOX, ῥῶξ. The *Tunica Uvea* of the Eye. Or the Pupil of the Eye, in *Moschion de Morbis Mulierum*.

RHUS.

The Characters are;

The Leaves are pinnated, or triphyllous; the Calyx is quinquefid, small and dentated. The Flowers are rosaceous, pentapetalous, and disposed in Bunches. The Ovary in the Bottom of the Calyx becomes a roundish Capsule, pregnant with a single and almost globular Seed.

Boerhaave mentions twelve Sorts of *Rhus*, which are;

1. *Rhus*; folio Ulmi. *C. B. P.* 414. *Tourn. Infl.* 611. *Boer. Ind. A.* 2. 229. *Rhus Obsoniorum*, *Sumach*. *Offic.* *Rhus Coriaria*, *Ger.* 1291. *Emac.* 1474. *Rhus*, *five Sumach*. *J. B. I.* 555. *Raii Hist.* 2. 1590. *Sumach*, *five Rhus Obsoniorum* & *Coriarium*, *Park. Theat.* 1450. **COMMON SUMACH**.

This *Rhus* grows not to be a Tree of any great Magnitude, having its Branches cloathed with long pinnated Leaves, whose single Pinnæ resemble the Leaves of the Elm-Tree, but are somewhat longer; the Flowers grow in large white Clusters, which are succeeded by small, flat, round, hairy Seed, of a restraining earthy Taste. It grows in *Italy*, *Spain* and *Turkey*. The Leaves and Seed are used.

They are both very restraining and stiptic, good for all Kinds of Fluxes and Hæmorrhages, both used inwardly and outwardly. They resist Putrefactions and Gangrenes, and Mortifications. It is an Ingredient in the *Syrupus Myrtinus*.

The *Unguentum Sumach* takes its Name from the Seed. *Miller. Bot. Off.*

It is refrigerating, drying and astringent, and is principally used in Fluxes of the Belly, Uterus and Menfes. It restrains the Hæmorrhoids, and corrects Bile. We think fit to observe, that the *Rhus Obsoniorum*, *Coriarium*, and *Rubeum* (the *Rhus* of the Cooks, of the Tanners, and the red *Rhus*) of *Galen*, are not different Species of Trees; but the *Rhus Obsoniorum* is no other than the Fruit; the *Rhus Coriarium*, the Leaves and small Branches; and the *Rubeum* the Seed of the same Tree. This is the Opinion of that very learned Botanist, Mr. *J. Ray*, with whom we agree in our Sentiments on this Head. *Dale*.

2. *Rhus Virginianum*. *C. B. P.* App. 417. *Raii Hist.* 2. 1591. *Tourn. Infl.* 611. *Boerb. Ind. A.* 2. 229. *Park. Theat.* 1450. *Sumach five Rhus*, *Ind. Med.* 114. **VIRGINIAN SUMACH**.

It is a Native of *Virginia*, but cultivated with us in the Gardens of the Curious, and is esteemed to have the same Virtues as the common Sumach.

3. *Rhus*; *Americanum*, *Rachi*, cui adnascuntur folia, rubra; folio lato, utrimque glabro, non serrato, *Pistachiæ* simili.

4. *Rhus*; *Americanum*; *Rachi*, cui folia adnascuntur, rubra; foliis præcedenti angustioribus.

5. *Rhus*; *Americanum*; *Rachi*, cui folia adnascuntur, rubra, alata; foliis molle *Clusii* brevioribus.

6. *Rhus*; *Africanum*; trifoliatum; majus; folio subrotundo, integro, molle & incano. *Plukn. Phyt.* 219. 8.

7. *Rhus*; *Africanum*; trifoliatum; majus; foliis obtusis & incis, hirsutis pubescentibus. *Plukn. Phyt.* 219. 7.

8. *Rhus*; *Africanum*; trifoliatum; majus; foliis acutioribus, incis, supra viridibus, glabris, infra argenteis, glabris. *H. R. D.*

9. *Rhus*; *Africanum*; trifoliatum; majus; foliis acutioribus, arguticis denticulatis, glabris, subtus argenteis. *H. R. D.*

10. *Rhus*; *Africanum*; trifoliatum; majus; foliis subtus argenteis, acutis, & margine incis. *Plukn. Phyt.* 219. 6.

11. *Rhus*; *Africanum*; trifoliatum; minus; glabrum; splendente folio, subrotundo, integro. *Plukn. Phyt.* 219. 9.

12. *Rhus*; *Africanum*; trifoliatum; majus; glabrum, splendente utrimque folio, subrotundo, medio quandoque crenato. *H. R. D. Boerb. Ind. Alt. Plant. Vol.* 2.

It is called *Rhus*, ῥῆς, from ῥέω, *rheo*, to flow, because it stops Fluxes. The Fruit, which is disposed as it were in Clusters, and is of a red Colour, and an acid and grateful Taste, is of excellent Service in a *Diarrhæa* and *Dysentery*, especially when it is boiled with the Rinds of *Pomegranates* in Water. It is no less useful in an immoderate Flux of the Menfes, in the *Diabætes*, *Hæmorrhoids*, and *Gonorrhæa*. The Seeds of the Sumach are only the dry'd Grains, taken out of the Clusters, and are not of so much Virtue, on account of their Dryness; and therefore the recent Berry is to be chosen, being excellent, particularly in resisting Putrefaction, and a Gangrene in a *Paronychia*. The Gum put in a Tooth eases the Tooth-ach. The tender Buds, and green Fruits before they are rendered succulent by Maturity, are of Service in a kind of hectic Fever, attended with profuse Sweats, on account of the too great Tenderness, Flaccidity and Humidity of the Fibres. *Hist. Plant. ascript. Boerhaave*.

Dioscorides tells us, that the Herb *Phanix*, φαινίς (which is a kind of *Lolium* distinguished among the Latins by the Epithet *Murinum*) is called by some ῥῆς, and by others *Anchinops*, ἀγχινῶψ; but the ῥῆς ῥυθρῆς, *Red Rhus*, of the Greeks, is the Seed of the *Frutex coriarius*, or Sumach. As to this last Plant, there is no small Controversy among the Learned, whether there be several Species thereof, or only one, because there are several mentioned, and those under distinct Names, in the Writings of the antient Physicians. One they call ῥῆς μαγνητικῆς (*Rhus Obsoniorum*), another ῥῆς Βυρσοδικτικῆς (*Rhus Coriariorum*) and a third ῥῆς Συριακῆς (*Syrian Rhus*). Some perhaps will say that these are but different Names for the same Thing; but when all these three are mentioned in order one after another, it can scarce be supposed that they are meant of the same Thing. Now these three before named are mentioned one after another, as so many several Ingredients, in Hundreds of Compositions of *Myrepsus*, for Example, in his *third Plaster*, where we read, κινάμυον, σιδήιον, ῥῆ μαγνητικῆ, ῥῆ Συριακῆ, ῥῆ Βυρσοδικτικῆ, “*Cinamon, Malicorium, Rhus Obsoniorum, Rhus Syriacum, and Rhus Coriariorum*.” Upon this Consideration *Fuchsius* concluded, and not without Reason, that there were as many Species as distinct Names of *Rhus*. But against his Opinion we have a strong Argument from *Dioscorides*, who asserts that the *Rhus Obsoniorum*, which some call *Erythrus* (red) is the Seed of the *Rhus Coriariorum*, where you may also observe a Difference in the Gender, for the Shrub is called ἡ ῥῆς (*hec Rhus*), but the Seed ὁ ῥῆς (*hic Rhus*). When therefore we read ῥῆς μαγνητικῆς in Authors, we must understand it of the Seed, which was applied to culinary Uses, but when we meet with ῥῆς Βυρσοδικῆς, or Βυρσοδικτικῆς, it is meant of the Shrub, whose Leaves were used in dressing of Leather. The *Rhus Obsoniorum*, or Seed, was also called absolutely ῥῆς, *Rhus*, as we find in *Galen's* *Evangelis*, and had also the Addition of ῥυθρῆς, *Red*, because when mature it turn'd red.

But the chief Difficulty lies in determining the *Rhus Syriacum*, which *Myrepsus* separates both from the *Rhus Obsoniorum*, and *Coriariorum*. *Theophrastus* says, that the Shrub *Rhus* grows every where; he therefore described the *Rhus* which grew in *Greece*. But *Pliny* accommodates the Description of *Theophrastus* to the *Syrian Rhus*, and reckons the *Rhus* among the Number of exotic Plants which were peculiar to *Syria*, tho' *Theophrastus* makes it to grow every where. Where we read in *Pliny*, quod vocatur *Rhus*, in a certain Manuscript is expressed quod vocatur *Ros*; and agreeably to this we find in *Celsus* *Ros Syriacus*, which *Brodeus* and *Grinitus* interpret of *Manna*, as if he had spoken of the *Syrian Ros*, or *Dew*, and not of the *Syrian Rhus*, or *Rhus*. *Pliny, Lib.* 24. *Cap.* 11. reckons two Kinds of *Rhus*, as distinct from the *Rhus Syriacum*,

where he says, *Nec Rhus Latinum habet*, &c. "Nor have we a Name in Latin for *Rhus*, tho' it be useful on many Accounts." He goes on to describe three Kinds of *Rhus*, or *Rhus*; one an Herb with Leaves like the Myrtle, another which is the *Frutex coriarius*, and the third under the Name of *Rhus erythraea*, which is the Seed of the second. As to the Herb *Rhus*, some take it for what some call *Rhus Montispefulanorum*, which is a Shrub with the Leaves of the *Oxmyrsine*; but the *Frutex coriarius* there mentioned, is the very same with that, *Lib. 13*, under the Name of the *Rhus Syriacum*. Many called the Seed *ῥῦς ἰσχυρός*, to distinguish it from the Shrub. The Medicinal Lexicons of the modern Greeks take the *ῥῦς μαγυρικός*, *ἰσχυρός* and *Συριακός* for the same Thing, and expound them all three by *συμακίς*, *Sumacin*, or *συμάκιον*, *Sumacion*, and and it is certain that the Shrub which the Greeks called *ῥῦς*, *Rhus*, is the same with what the *Arabians* now call *Sumac*, but as for the *ῥῦς Συριακός*, *Rhus Syriacum*, I imagine there is no Difference between it and the common *Rhus*, in Genus or Species, but only in Goodness, and perhaps the Seed was brought out of *Syria*, as being the best and most proper for seasoning of Meat, in which it was employed, as *Pliny* says, instead of *Salt*, and with an Addition of *Silphium*, was thought to render all Flesh-meat more savoury and grateful to the Palate, *Salmasius de Homonym Hyl. Jatr. Cap. 58*.

RHYAS. *ῥυάς*. The same as RHOEAS.

RHYEMA. *ῥύημα*. A Sort of Cake made of Honey and fine Flower.

RHYMA. *ῥύμα*. A Remedy. *Castellus, Gorraeus*.

RHYME. *ῥύμη*. The same as RHOPE.

RIHYMMA. *ῥύμμα*. From *ῥύμιω*. to absterge. An Abstergent Medicine.

RHYNDACE. *ῥυδάκη*. A Sort of Bird about the Size of a Dove. *Hesychius*.

RHYPODES. *ῥυπόδες*. An Epithet for Medicines of a strigentitious Consistence; from *ῥυπος*, *Sordes*. *Galen, de Comp. M. P. G. L. 2. C. 1*.

RIHYPOS. *ῥυπος*, *Sordes*, Filth, in the Galenical Stile, is an Excrement of the third Concoction, and collected on the Superficies of our Bodies. For as each of the two Concoctions, both that which is performed in the Stomach, and that which is afterwards made in the Liver, leaves two Kinds of Excrement, one moist, and the other dry; so from the third Concoction arise, also, two Kinds of Excrement in every Particle of an Animal, being produced from the very Juices with which they are nourished. One of these Excrements is Sweat, which was before a Vehicle for transmitting Aliment, and is a thin serous Humour, like Urine; the other consists of half-concocted Reliques, which could not be assimilated to the Part in order to its Nourishment. This also is of a thin Substance, as being the same which is evacuated through the Pores of the Skin by insensible Transpiration; but it is mixed also with some grosser excrementitious Parts, whence it very frequently stops and stays at the Skin; and hence have the Hairs their Original, and, also, those *Sordes* which are still accumulated and diffused over the Skin. These *Sordes* were not unknown to the Ancients, who very carefully absterged them from human Bodies, for various Uses, giving them the Name of *Strigmenta*, *Strigments*, as well as *Sordes*; the Greeks called them not only *ῥυπος*, *Rhypos*, but *γλοιός*, *Gloias*. They have the Virtue of moderately heating and discussing, which they acquire not so much from the Nature of our Bodies, as from the Mixture of Oil and Dust. For those *Sordes* which were absterged with the Strigil in Baths, were a Mixture of Oil and Sweat; but those which were procured from the *Palaestra*, or Common-Place of Exercises, had, besides, an Addition of Dust, both that which was sprinkled on the Combatants after they were anointed with Oil, and also what was raised by stirring in the Heat of the Conflict: That kind of Sweat which was thus excited, was called by a peculiar Name *παῖς*, *Patus*. Those *Sordes* then which had a greater Mixture of Oil, must be acknowledged to have more of an emollient Virtue; but those which had more of Dust in them, were more drying, discutient and digestive, especially if the Dust had more of Asperity and Acrimony than ordinary. For that Dust which is of a finer and more pinguious Substance than usual, and is what *Galen, Lib. 5. de Sanit. Tuend.* calls *κόβος λιπαρός*, "fat or greasy Dust," is of a more emplastie Nature, and prevents a Diffuence and Retention of the Particles of the Body on which it is sprinkled. But of all *Sordes*, or *Strigments*, those are most discutient, as well as moderately drying and emollient, which were scraped off, by the Ancients, from Statues and Vessels of Brass or Copper, in which Oil was reserved for the Uses of the *Palaestra*, as having contracted somewhat of an *Alruge* from the Metal, as *Paulus, Lib. 7.* observes. *Gorraeus*.

RIHYPTICOS. *ῥυπτικός*, from *ῥύμιω*, to absterge. Abstergent.

RIHYSIS. *ῥύσις*. A Flux, a Term much used by the Physicians of the Methodic Sect. See the PREFACE. In o-

ther Medicinal Writers, it imports a Hæmorrhage; a *Diarrhæa*, a *Gonorrhæa*, or a Falling of the Hair.

RHYSSEMATA. *ῥυσηματα*. The Wrinkles and Sordes which appear upon the Skins of old People. *Castellus, Gorraeus*.

RHYTHMOS. *ῥυθμός*. The Cadence or Harmony of the Pulse; or the due Proportion betwixt one Pulsation, and those which are subsequent. See ARYTHMOS.

RHYTIDOSIS. *ῥυτίδωσις*. A Wasting, and Corrugation of the Eye. *Galen*.

RIAL ARMENIGOS. *ῥίαι ἀρμενίγος*. A barbarous Name for an Antidote in *Nicolaus Myrepsus, Sect. 1. C. 510*.

RIBES.

The Characters are;

It is a Shrub without Prickles, with large Leaves; the Pedicle ends in an Ovary, crowned with a large Calyx, divided into five great Segments; the Flower is pentapetalous, five small Petals arising from the Interstices of the Segments, and is furnished with five Stamina; the Ovary emitting a long Tube from the Centre of the Apex, becomes a round Fruit, which is umbilicated, produc'd in Clusters, and full of small Stones.

Boerhaave mentions six Species of *Ribes*, which are; 1. *Ribes*; vulgaris, acidus; ruber. *J. B. 2. 97. Boerb. Ind. A. 2. 54. Ribes, Ribesia*, Offic. *Ribes, Grossularia*, Ind. Med. 56. *Ribes vulgaris fructu rubro*, Ger. Emac. 1593. Ind. Raii Hist. 2. 1485. Synop. 3. 456. *Ribes fructu rubro*, Park. Theat. 1561. *Ribes rubra*, Parad. 558. *Grossularia multiplici acino, five non spinosa hortensis, rubra five Ribes Officinarum*, C. B. P. 455. Tourn. Inst. 639. RED CURRANTS.

The Currant-tree is well known to be a somewhat taller Tree than the Goose-berry, with larger Leaves and Thorns without. The Fruit grows in small Bunches of a red Colour, and of a sharp sweetish Taste; it is usually planted in Gardens, but is said to grow wild in the North of England. It flowers in April, and the Fruit is ripe in June. They are cooling and grateful to the Stomach, quench Thirst, and are somewhat refrigent; a Jelly made with the Juice and Sugar, is cooling and grateful in Fevers. Currants are very rarely used in the Shops. *Miller's Bot. Off.*

The Jelly of Currants is saponaceous and resolvent, and an excellent Medicine, as well in Fevers, as chronical Obstructions, if taken for a long Time together, diluted with Water.

Currants are of two Sorts, red and white, which have nearly the same sharpish Taste, which proceeds from the acid Salts plentifully contained in them, which are dissolved in a sufficient Quantity of Phlegm. These acid Salts render them cooling, and proper for allaying the Heat of the Bile, and other Humours. They contract the Stomach a little, and resist Poison. The frequent eating of Currants sometimes occasion little Prickings in the Stomach; but the over-sharpness may be qualified by mixing a little Sugar with them. Good Sweet-meats are made of Currants, and also a Liquor, with Water and Sugar called Currant-wine, used in the Heat of Summer to cool and moisten the Body. A cooling moistening Jelly is, also, made of them, which is used in Physic, and in Food, being very agreeable to the Taste; this mixed with Water is given feverish Patients to drink. Currant Leaves are astringent. *Lemery on Foods*.

2. *Ribes*; flore rubente. *J. B. 3. 98. Grossularia, hortensis, majore fructu rubro*. C. B. P. 455.

3. *Ribes*; quæ *Grossulariæ*; hortensis; majore fructu albo. *H. R. Par.*

4. *Ribes*; vulgaris; acidus; albas baccas ferens. *J. B. 2. 98. Grossularia, Hortensis, fructu Margaritis simili*. C. B. P. 455.

5. *Ribes*; alpinus; dulcis, *J. B. 2. 98. Grossularia, vulgaris, fructu dulci*. C. B. P. 455.

6. *Ribes*; nigrum vulgo dictum; folio olente. *J. B. 2. 98. Raii Hist. 2. 1486. Synop. 3. 456. Boerb. Ind. A. 2. 254. Ribes nigra*, Offic. Park. Parad. 558. *Ribes fructu nigro*, Theat. 1562. Ger. Emac. 1593. *Grossularia non spinosa, fructu nigro*, C. B. P. 455. THE BLACK CURRANT.

It flowers in June. The Fruit is recommended in a Quinsy, whence they are called Squinancy Berries. *Raii Hist. Plant.*

RIBESIA, a Name for the *Ribes*.

RICINOIDES.

The Characters are;

The Male Flowers consist of several Leaves, which are placed in a circular Order, and expand in Form of a Rose; these are barren. At remote Distances from these Flowers, upon the same Plant, are produced the Embryo's, which are wrapt up in the Flower-Cup, and afterwards become tri-capsular Fruit, containing one oblong Seed in each Cell.

Boerhaave mentions two Species of *Ricinoides*, which are;

1. *Ricinoides*; Americana; folio Gossypii. *Tourn. Inst. 656. Boerb. Ind. A. 253. Nuclei Barbadoes*, Offic. *Ricinus Americanus*, Ger. 339. Emac. 496. Park. 183. Raii Hist. 1.

166. *Ricinus Americanus major semine nigro*, C. B. P. 432. *Ricinus major Americanus Curcas dictus*, & *Faba Purgatrix Indiae Occiduae*, J. B. 3. 643. *Ricinoides*, seu *Pincus purgans*, vel *Pinbones Indici*, Cod. Med. 97. *Munduy-Guacu*, seu *Nux Cathartica Americana*, Pil. 169. *Mundubi-Guacu Brasiliensis Pinbones Lusitanis*, mihi *Nux Cathartica*, Marcg. 96. *Quauhay-obuatli* 1. *Avellana Cathartica*, Hern. 87. BARBADOES NUTS.

This grows in *Barbadoes*, and other Parts of the *West-Indies*. The Fruit is oblong, oval, of the Size of a small Bean, having one Side convex, the other depressed, including under a hard Pellicle a white Hemel. It agrees with the *Ricinus* in Virtues.

2. *Ricinoides*; Arbor; Americana; folio multifido. *Tourn. Inst.* 566. *Boerb. Ind. A.* 253. *Palma Christi*, *Tourn. Mat. Med.* 75. *Ricinus Americanus tenuiter diviso folio*, Raii *Hist.* 1. 167. *Avellana purgatrix*, C. B. P. 418. Raii *Hist.* 2. 1386. *Avellana purgatrix Novi Orbis*, J. B. 1. 322. *Avellanæ purgatrices*, Park. *Theat.* 1621. *Nuces purgantes*, Ger. 1362. *Emac.* 1546. PURGING NUTS.

This is an *American Plant*. The Nuts are of a whitish Colour, and are excessively cathartic. It is said, that a single Nut both vomits and purges for several Days, but that if the Pellicle is taken off, and it is divided into smaller Doses, it purges gently. *Hist. Plant. Boerb. ascript.*

RICINOKARPOS.

The Characters are;

The Male Flowers, which are dispos'd in a Spike, are produced in the following Manner: At the End of a little Tender, hairy Pedicle, grows a naked, tripetalous, herbaceous, Floscule, the Petals, which are acute, being expanded in the Form of a Star. From the Center of this Floscule, which is raised in the Form of a Cone, are produced nine Stamina, each furnished with one Feticulus.

Almost in the same Place of the Plant arise the Ovaries, furnished with shorter Pedicles, round, hairy, triangular, tri-capsular, and tricircous, like the *Ricinus*. The Place whence the Flower and Ovary have their common Origin, is surrounded with a Sort of common Calyx, from which the Ecdicles of the Flowers are produced.

Boerhaave mentions two Sorts of *Ricinokarpus*, which are;

1. *Ricinokarpus*; Afra. *Mercurialis procumbens, dicoccus, Africana, folio violæ tricoloris*. Par. Bat. App. P. 10.
2. *Ricinokarpus*; Americana; flore albo spicato, foliis Circææ acutiori. *Boerb. Ind. Alt. Plant. Vol. I.*

RICINUS.

The Characters are;

The Root is fibrous; the Leaves are alternate, large, and ragged; the Flowers are some Male, some Female, on the same Spike of the same Plant. The Male Flower consists of a monophyllous quinquefid Calyx, expanded like a Star, from whose Center arise Multitudes of fertile, Male Stamina, which appear, while they are beheld united, like a brachiated *Thyrus*.

The Female Flower, or Ovary, consists of three Cells growing to one Axis, and so resembling a triangular Fruit, whose Apex is adorned with many Pinnulæ, from the Middle of which arise three Tubes, each of which has a rough, bifid Apex. Each Cell contains a single Seed, in Shape and Bigness resembling a Pine Kernel.

Boerhaave mentions five Sorts of *Ricinus*, which are;

1. *Ricinus*; vulgaris. C. B. P. 432. J. B. 3. 642. Raii *Hist.* 1. 166. *Tourn. Inst.* 532. *Boerb. Ind. A.* 2. 253. *Cataputia major*, *Ricinus*, *Offic. Granadilla Peruviana Pharmacep. Ricinus*, Ger. 399. *Emac.* 496. *Palma Christi*, Cod. Med. 88. *Ricinus seu Cataputia major vulgarior*, Park. *Theat.* 182. *Nhambu-Guacu seu Ricinus Americanus*, Pil. 180. MEXICO SEEDS.

This Plant grows to be as tall as a little Tree, with a smooth jointed hollow Stalk, a Finger thick or more, covered with a glaucous Mealliness. The Leaves are large, roundish in Circumscription, but cut into five, seven, or sometimes nine sharp pointed, and serrated Divisions; the Foot Stalks are long, centring in the Middle of the back Part of the Leaves. The Flowers are small and staminate, growing on the Top of the Stalks, but lower down, and upon the Body of the Plant grow Bunches of rough triangular Husks, each including three white Seeds less than Horse Beans, which, in their brittle Shells, contain spotted Kernels, of a sweetish oily Taste.

These Kernels, which are the only Part used, are given by some Persons to purge watery Humours, which they do both upwards and downwards with great Violence; but considering we have much better and safer Purges to answer all Intentions, they are but seldom used. The Oil expressed from the Seeds, is good to kill Lice in Children's Heads. *Miller's Bot. Off.*

2. *Ricinus*; Americanus; major; caule virecente, H. R. P. 156.

3. *Ricinus*; Africanus; maximus; caule geniculato, ruticante. H. R. P.

4. *Ricinus*; Americanus; perennis.

5. *Ricinus*; vulgaris; minor. C. B. P. 432. *Erawai, Ricini pusillum genus*. Clus. Exot. 48. *Ricinus minor*. H. Eyst. Æst. o. 8. F. 11. F. 1. *Boerhaave Ind. Alt. Plant. Vol. I.*

It is called *Ricinus*, because the Seed resembles the Animal of that Name, which so greatly infests Dogs and Black-Cattle; it is also called *Palma Christi*, because the Leaves are said to resemble the Palm of a Hand; and some believe it is the Tree which shaded *Jonas* after he was discharged from the Whale.

The fifth is called the *Purging-Bean*; of this is prepared the Oil of *Kerva*, the *Oleum Cicinum*, called the *Oleum Ficus Infernalis*; so much celebrated in the *Indies* as a Lenitive, tho' this be the most acrimonious of all the Species. If it be stripped of its Pellicle, it purges upwards and downwards to such a degree, as to be prescribed by *Hippocrates* in the room of the *Grana Cnidia*, or *Cervus Cnidius*. But being taken with this Pellicle, it purges so violently as to cause an Inflammation of the Stomach and Intestines, whence it may pass for Poison. But tho' the Seeds are highly acrimonious, the Oil is very lenient, and excellent for a Rigor or Stiffness of the Limbs, and also for the Itch, Ulcers, and to destroy Worms. The fourth and fifth Species taken inwardly, work violently both by Stool and Vomit, whence they are prescribed in Apoplexies, Lethargies, and as Hydragogues in Dropsies. *Hist. Plant. ascript. Boerhaave.*

RICINUS is also a Name for an Insect, which is thus distinguished.

Ricinus, *Offic. Schrod.* 5. 345. *Aldrov. de Insect.* 559. *Jonst. de Insect.* 91. *Charlt. Exerc.* 52. *Ricinus Oshupes*, Raii *Hist. Insect.* 10. THE TICK.

It is a nasty little Animal, of a livid Colour, with a blunt and roundish Tail, and full of Blood, and very much infects Cows, Swine, Goats, Sheep and Dogs.

The Blood of those Ticks which live about Dogs, as *Pliny* says, is a *Psilotrum*, or Medicine to take off Hair, and mitigate an Erysipelas; and we are told by *Amatus*, that it is an admirable Remedy for an obstinate and malignant Impetigo. *Dale.*

RIGOR.

Before we treat of the Prognostics which may be drawn from *Rigors*, with respect to the Death or Recovery of the Patient, it will be necessary, first to settle the Notion of a *Rigor*; for if this be omitted, no certain Judgment in Diseases can be formed from such a Symptom. A *Rigor* then is a sudden and violent, or as *Galen*, *Lib. de Trem. Palp. Convuls.* & *Rigore*, says, "A dolorific Perfriction or Refrigeration of the natural Heat, with an unequal Concussion and Agitation of the whole Body, proceeding from the expulsive Faculty of the sensible Part, endeavouring to expel the noxious Humours." It is distinguished from a *Tremor*, in that a *Tremor* is only a Vibration of one Member, but a *Rigor* of the whole Body. But of this we shall speak more accurately a little below. A *Rigor* sometimes happens without a Fever, but generally attends it. That a *Rigor* may be excited without a Fever, we are taught by *Galen* in the Book abovementioned, *Cap. 7.* and *de Caus. Symptom. Sect. 2. Cap. 5.* and in his Book *de Inequal. Temper. Cap. 8.* where he has demonstrated, against the Ancients, that *Rigors* may happen without a Fever. And he himself observed at *Alexandria*, a young Man who was seized with a *Rigor*, after eating unripe Dates, from the gross Humour obstructing the Veins. That a *Rigor* could be without a Fever was unknown to the Ancients, except *Hippocrates*, who, 1 *Epid. Sect. 3. Ægr.* 5. says of the Wife of *Epicerates*, that "when the Time of her Labour approached, she was seized with a *Rigor*, but had no Increase of Heat, as was said; the next Day the same Symptom continued, and the third Day she was delivered of a Daughter." There may be therefore a *Rigor* without a Fever, which *Galen* and the *Greeks* call *ῥίγος ἀνὸ θερμότητος*, "a *Rigor* without Heat;" but the *Rigor* which admits of Heat, as being succeeded by a Fever, is a violent, concussive and morbid Affection.

But how are we to distinguish a *Rigor* from a Coldness and a *Horror*? Since we are told by *Galen*, *de Trem. &c.* before cited, *Cap. 6.* "For a sick Person to be under a *Rigor*, is certainly not the same as to be under a *Horror* or *Coldness*." And it is usual to say, that the Approach of the Fit is attended in one Patient with a *Rigor*, in another with a *Horror*, and in another perhaps only with a *Coldness*; and this is the common Language and Use of Words in the Writings of Physicians. Thus when a Person becomes vehemently cold, without any Concussion or Agitation of the Body, he is not affected with a *Rigor*; for to deserve that Name, it must be attended with an unequal and involuntary Motion. If this Coldness be

[" L.] accom-

accompanied only with a gentle and unequal Commotion of the Skin, it is called a *Perfriction*; but if this Commotion of the Skin be very considerable, and attacks the Patient by Fits, without attacking the whole Body, it is called a *Horror*; so that a *Horror* is such an Affection of the Skin alone, as a *Rigor* is of the whole Body.

The Causes of a *Rigor* are, first, immoderate Heat or Cold: That these produce sudden and great Alterations in the Body, and induce *Horrors* and *Rigors*, is very well known to such as enter an immoderately cold or hot Bath, and is demonstrated by *Galen*, *de Caus. Symptom. Lib. 2. Cap. 5.* Justly therefore it is said by *Hippocrates*, that "Cold irritates Ulcers, hardens the Skin, causes intolerable Pains and ferbrile *Rigors*." Some are seized with a *Horror* from an Excess of Fear, as others are with a *Tremor* from Ulcers and Abscesses under a Suppuration; and that *Rigors* are sometimes induced by Section and Inflation, we are told by *Galen*, in *6 Epid. Com. 3.* where he says, that "such Operations induce a *Rigor*, as from something acrimonious affecting the sensible Flesh."

Agreeably to this Notion, the same Author rightly pronounces the principal Causes of a *Rigor* to be bilious and acrimonious Humours; for these, by vellicating the sensible Parts, provoke the natural Heat, which, in striving with great Force to expel them, excites that unequal and convulsive Motion of the whole Body, as he expresses it, *de Caus. Sympt. Lib. 2. Cap. 5.* These *Rigors* are very apparent in bilious Fevers, especially of the intermittent Kind. In these Cases, the thin, bilious, and highly acrimonious Humours being expelled without the Veins, are under continual Impulses from all the sensible Corpuscles, and forced from one Place to another, till they take their Course either towards the Skin, and there discharge themselves through its Pores in Sweat, or are thrown upon the Stomach, and discharged in vomiting, or forced downwards into the Intestines, and evacuated by Stool. Hence *Rigors* are usually succeeded by bilious Evacuations, as *Galen*, *Com. 2. in 6 Epid.* observes, where he says, "In our Discourse of a *Rigor* we have shewn, that Excretions of bitter Bile, which hurries through the sensible Bodies in order to be discharged, are the Consequence of that Disorder. This then is the Origin of a *Rigor*: The noxious and acrimonious Humours are, by the expulsive Faculty of the Veins, forced without those Vessels upon the other Parts, from which, since they as much infect and irritate them by their Acrimony, and excite their expulsive Faculty, as in the other, they are equally expelled and forced upon others; and thus successively, till they make their Retreat to the Skin, Stomach or Belly, where they find a Vent, as has been said. Now the injured and irritated Parts, in striving to expel the noxious Humour, call in the natural Heat to their Assistance, whence the extreme Parts are refrigerated, being destitute of that Heat. But when the Expulsion of the Humours is finished, which is when they have made their Way to the Skin, or some other Place, whence they may be excreted, the Heat is recalled, and the extreme Parts recover their Heat, and the sooner and more effectually, if the natural Heat be vigorous; but if this be very weak, those Parts are very slowly and insufficiently heated, or hardly return to their usual Warmth. Under this Expulsion of the Humours happens that unequal or irregular Constriction and Vibration of the whole Body, which we call a *Rigor*; during which the extreme Parts are refrigerated, the natural Heat retiring inwards; for which reason the Body is always cold under a *Rigor*."

This Affection, which we call a *Rigor*, is not only excited by acrimonious Humours, but sometimes by a gross Humour obstructing the Veins. Of this Nature was the *Rigor* of the young Man of *Alexandria*, observed by *Galen* as above-mentioned; for which he accounts in the following Manner: "In this Case a *Rigor* is occasioned by an Obstruction of the Motion of the natural Heat by Force. For this Heat, being entire and unimpair'd, both in Substance and Strength, strives to expand itself, and to be distributed into all Parts of the Body; but being forcibly restrained, and repelled to the more inward Parts, it retreats to its own Original; but being incapable of making any Stay there (for to a Substance of a moveable Nature, Constancy in Place is Death) collecting, and, as it were, concentrating itself, it recurs not with an equable and free Motion, but rushing forth with an Impetus, and as it were a Horse starting from the Barrier, it directs its full Force against what obstructed its Passage, endeavouring to propel the same, and clear the Way; but being repelled, and its Violence check'd in the Midst, the whole Body is shock'd at the Encounter. For besides other Effects, it is rendered vaporious by dashing against those Obstacles, and recoils inwards, as tho' from Repercussion, and retreats again to its Principle or Original; thence again breaking forth, it falls on with more Violence, and being again repulsed, renews its Attacks till

"it has removed the Nuisance." A *Rigor* begins at the Back and Loins; to which Subject relates that of *Hippocrates*, *5 Aph. 69.* where he says, "A *Rigor* in Women begins principally at the Loins, and proceeds by the Back to the Head: In Men, they begin in the anterior rather than the posterior Parts of the Body, as in the Cubits and Thighs. In Men also the Skin is of a rare Texture, as appears by the Hairs."

But let this suffice for illustrating the Notion of a *Rigor*; we are now to examine what may be predicted from it; and here we shall treat first of such *Rigors* as are of good Prognostication. Among *Rigors* observed in Fevers, those are good which are periodic, and the proper Symptoms of Fevers. Periodic *Rigors* which happen every Day, or every second or third Day, and precede intermittent Fevers, are all salutary, and by *Hippocrates*, *4 Aph. 43.* pronounced void of Danger; and the more so in proportion to the Greatness of the Intermittion, and the Shortness of the Fit. *Hippocrates*, *4 Aph. 63.* tells us, that "quotidian *Rigors* are solved by quotidian Fevers;" for, as *Galen* says in his Comment on the Place, since *Rigors* happen with Commotion, through the whole Habit of the Body, succeeded by an Expurgation and Evacuation of the Humours, the Intermittion of such Fevers may be rationally expected to terminate at last in an utter Cessation of the Disorder. What he (*Hippocrates*) says of quotidian *Rigors*, that they are solved by quotidian Fevers, is as true of tertian and quartan *Rigors*, as appears from Observations on Tertian and Quartan Fevers, whose Returns are always preceded by a *Rigor*.

But the most salutary of all *Rigors* are critical ones; such are those which attend a Fever upon some critical Day, with Signs of Concoction, and are succeeded by copious and kindly Sweats, or Vomiting, or Stools, or an Hæmorrhage from the Nostrils, which are followed by a perfect Removal, or at least a remarkable Abatement of the Fever. Of such *Hippocrates* speaks, *4 Aph. 58.* where we are told "if one under a burning Fever be seized with a *Rigor*, he becomes freed from the Disease." There seem to be two Properties belonging to a good *Rigor*; the first is, that it be succeeded by a remarkable Heat, of which *Galen*, *Lib. de Trem. &c. Cap. 6.* assigns three Causes; first, that the natural Heat being repressed from the Superficies, is collected in the internal Parts, in order to assist in expelling the noxious Humours; after which being cherished and increased by the Humour which resides within, it breaks forth all at once, and expands itself with more Vehemence. Secondly, that in its violent Recourse, its Motion being much accelerated, it kindles in striking upon the external Parts, and is increased after the same manner as Stones and Iron acquire a considerable Heat by Motion and mutual Attrition. And lastly, that the Heat, in its Return to the Superficies, brings along with it some hot Humour, which must have its Effect in heating the external Parts; and the more vigorous the State of the natural Heat, the hotter is the Body after a *Rigor*, and the weaker this Heat, the less Warmth will accrue to the Body. Hence it is a good Sign for Bodies to be well heated after a *Rigor*, since it indicates a Firmness and Strength of Nature, as on the contrary, which will appear hereafter, for a Patient, after a *Rigor*, to acquire little or no Heat, shews him to be in a very bad State, and that Nature is very weak and low. For the Body therefore to acquire an extraordinary Degree of Heat after a *Rigor*, by what Cause soever procured, is a very good Sign.

The other Property of a beneficial *Rigor* is, that it be succeeded by very beneficial Evacuations or Purgations; to which we may add, that it wholly removes, or at least diminishes, the Fever. Such were the *Rigors* observed by *Hippocrates* in many of his Patients, particularly the Wife of *Epicrates*, *Charion*, the Virgin of *Larissa*, the Woman which lay ill at the House of *Timæus*, and *Philistis*. Of the Wife of *Epicrates*, *1 Epid. Sect. 3. Aigr. 5.* he says, "On the fourteenth Day (of her Illness) she was seized with a new *Rigor*, succeeded by a high Fever; on the fifteenth she vomited at several times bilious yellow Matter, sweated, and was free from a Fever; towards Night was highly feverish, and her Urine was thick, with a white Sediment." And of *Charion*, *3 Epid. Sect. 2. Aigr. 5.* we are told, that "on the seventh Day he was seized with a new *Rigor*, had a high Fever, sweated all over his Body, and had a Crisis." In the same manner when he relapsed on the seventeenth Day, "he was taken with a new *Rigor*, succeeded by a high Fever, sweated, had a Crisis, and was freed from his Fever." In his Account of the Virgin of *Larissa*, *3 Epid. Sect. 3. Aigr. 12.* he tells us, "On the sixth Day she had a copious Hæmorrhage from the Nose, and was seized with a Horror, succeeded by a copious and hot Sweat all over the Body, had a Crisis, and was freed from her Fever." The Woman also at the House of *Timæus*, *4 Epid. T. 25.* had a *Rigor* succeeded by a happy Crisis. The same was the Case of *Philistis* the Wife

Wife of *Heraclides*, 7 *Epid.* 136. Sometimes a *Rigor* is a good Sign in an *Hæmorrhage*, as we find it pronounced, 1 *Prorrhët.* 150. where it is said, that "they who in the Beginning are molested with a copious *Hæmorrhage*, have the Course of it stopped by a supervening *Rigor*;" and not without Reason, since, under an immoderate Evacuation, the Heat, together with the Blood, sometimes retire to the inward Parts. A *Rigor*, however, in Diseases of this Kind, portends their long Continuance; for as *Galen* says, in his Comment on the Place, "If an Eruption of Blood does not mitigate the Disorder, but is succeeded by a *Rigor*, both this and the Disease are rendered of long Duration, because the Body is difficult to be heated." Sometimes *Rigors* portend a Crisis upon the Coming on of a *Tremor*, according to *Coac.* 27.

We have treated enough of such *Rigors* as are esteemed of good Prognostication in Diseases, and are now to say something of the contrary Kind, or those which portend nothing but the Destruction of the Patient. Of this Nature, in the first Place, is a *Rigor* succeeded by little or no Heat; for this is an Indication of great Weakness of Nature, agreeably to 1 *Prorrhët.* 65. where we read, that "Refrigerations from a *Rigor* not succeeded by Heat, are bad." And the Reason is, as *Galen* observes, because it indicates an Extinction of the Heat, as it did in the Case of the Woman who lay ill in *Mendacium Foro*, 3 *Epid.* Sect. 2. *Ægr.* 12.

Those *Rigors* are also pernicious which are succeeded by none, or a bad Evacuation, and are properly reckoned among those bad or imperfect critical Signs which determine nothing. *Galen*, in 1 *Prorrhët.* discoursing on this Subject, says, "They who understood this of a *Rigor* in general, should have always remember'd, that if it happened on the third or fourth Day, it was a peculiar Symptom of such Fevers; but if it appeared after that Time, and was not attended with a Crisis, it was of very bad Signification."

Rigors are of a very bad kind, when they are attended with some bad Excretion, because they are of the Number of undetermining critical Signs, which *Galen* affirms to be either mortal, or of difficult Crisis [that shew the Disease will have a fatal, or at least a very hard and dangerous Turn.] On the same Point we read, 1 *Prorrhët.* 66. "If Heat returns not upon a Perspiration, or extreme Refrigeration, attended with Sweating, it is a bad Sign; and if to those there be an Accession of a burning Heat and Pain of the Sides, with frequent Attacks of a *Rigor*, the Patient is in a dangerous State." Now all cold Sweats are dangerous, especially such as affect the upper Parts, and those which, tho' copious and profuse, remove not the Fever. We find an Instance to this purpose, 1 *Epid.* Sect. 3. *Ægr.* 11. in the Wife of *Dromedus*; in the Account of whose Case it is said, "that on the third Day about Noon she had the Return of a *Rigor*, with a high Fever, Urine as before, a Pain of the Hypochondrium, had a Loathing and Nausea, a troublesome Night, without Sleep, with a cold Sweat diffused over all her Body." She died on the sixth Day. The Woman also who lay sick in *Foro Mendacium*, had several Fits of a *Rigor*, attended with a cold Sweat before her Death. A copious Sweat also, tho' not cold, in a crude State of the Disease, which neither removes the Fever nor its Symptoms, is mortal; and especially if it appears on the sixth or eighth Day. Such was that observed by *Hippocrates*, 1 *Epid.* Sect. 3. *Ægr.* 12. in the Person who was taken ill of a Fever after Supper, of whom he says: "On the eighth Day he was seized with a *Rigor*, had a high Fever, sweated much, seemed to be without a Fever, slept little, and was cold after Sleep." On the eleventh Day he died. And we read, *Coac.* "that repeated Fits of a *Rigor*, with Sweating, are mortal." All *Rigors* therefore, succeeded by a bad Evacuation, or none at all, are bad.

With Respect to a Fever, *Rigors* which neither remove nor alleviate the Disorder, are of a very bad Kind. Thus has *Hippocrates* determined, 4 *Aph.* 56. "A *Rigor*, he says, coming upon a Fever, if the Disease is not mitigated, is a bad sign." [In that Aphorism it is a Sweat, and not a *Rigor*; but the Aphorism which would pretty well answer the Purpose, is 4 *Aph.* 46. which is, "that a *Rigor* coming upon a Fever, and the Disease not intermitting, if the Patient be weak before, is mortal."] But the Case is worst of all, when a *Rigor* of this Nature is succeeded by a copious Evacuation, as *Galen* rightly observes in his Comment on 4 *Aph.* 46. "For if, he says, an Evacuation follows a *Rigor*, and the Fever be not alleviated thereby, the Patient must probably sink under them in Conjunction; both because the weak Condition of his Body cannot bear the Agitation of the *Rigor*, and also because the Evacuation is sufficient to cause his Dissolution." But if the Strength of the Patient be very much exhausted by the Disease, a *Rigor* will prove mortal, according to 4 *Aph.* 46. before quoted; for all *Rigors*, of what kind soever, which happen under a great Decay of Strength, are pernicious, as indicating an Extinction

of the natural Heat. And to this purpose are we to understand the Author of 1 *Prorrhët.* 65. where he says, that "a Refrigeration from a *Rigor*, where the Heat returns not again, is a bad Sign." And *Coac.* 221. "a *Rigor* coming upon a severe Fever, with a Distortion of the Eyes, proves mortal." Perhaps also what *Hippocrates* says, 7 *Aph.* 7. "A *Rigor* and Delirium after a Debauch, are bad," may be applied to these Kinds of *Rigors*; for such a *Rigor* is occasioned, as *Galen* on the Place observes, from an Extinction of the Heat by an Oppression, in the same manner as a Fire is extinguished by heaping too much Wood upon it, or a Lamp by pouring on too much Oil.

The pernicious Signification of *Rigors* is also known from other preceding, concomitant or subsequent bad Signs. In a continual Fever, a *Rigor*, attended with bad Signs, is always to be dreaded. This will appear from what *Hippocrates* says of them, 1 *Epid.* "When burning Fevers, he says, began (to be epidemic) they afforded Signs by which one might judge when they were like to prove mortal; the Patients were first seized with a high Fever succeeded by a *Rigor*, were incapable of Sleeping, were extremely restless, thirsty, and loathed every thing." In Phrenesies also accompanied with white Stools, or white Urine, the Accession of a *Rigor*, is a bad Sign, as we are told, 1 *Prorrhët.* 13. and T. 64. it is said, "that for a Person under a *Rigor* not to know his familiar Acquaintance, and to be forgetful of what is past, is a bad Sign;" as it indicates, as *Galen* says in his Comment, that the natural Heat is overcome by the extraordinary Refrigeration. And a little after, 1 *Prorrhët.* 67. "Burning *Rigors* [*καυμάδια ῥίγια*] are not without Danger; and when accompanied with a fiery Redness [*τὸ φλογώδες*] of the Face, and a Sweat, are bad Signs." This is repeated, *Coac.* 7. And again, T. 89. speaking of these Kinds of *Rigors*, he says, "For a Person labouring under a Fever, and a Lassitude, with a Distortion of the Eyes, to be seized with a *Rigor*, is of pernicious Signification; and a comatous Disposition in such Cases is bad." Again, *Coac.* 14. "Severe *Rigors*, inducing a *Torpor*, are malignant," as indicating an Extinction of the natural Heat. And, T. 22. "Rigors accompanied with Head-ach and Faintings, are mortal;" because they indicate a considerable Inflammation of the Brain. Our Judgment, therefore, of the bad Event of a *Rigor*, is justified by the Concomitance of other bad Signs. This is further illustrated, *Coac.* 20. or more clearly, 1 *Prorrhët.* 101. where it is said, that "such as labour under repeated Fits of a *Rigor*, which is exasperated towards Night, with Watchings or Agitations of the Veins [*φλεβοδοναδία*, see the Article PHLEBODONODES] in Sleep, and involuntary Discharges of Urine, fall at last into a Coma and Convulsions." *Rigors*, therefore, in an acute Fever, in Conjunction with other bad Signs, render the fatal Event more easily to be prognosticated.

Continual and frequent *Rigors* are also of a bad kind, as we find them pronounced, *Coac.* 9, 10. since they indicate either a Suppuration of some one of the Viscera, or vain Efforts towards a Crisis, or else an Extinction of the natural Heat. We have an Instance to this purpose, in the Woman who lay ill in *Foro Mendacium*, before quoted; and whose History will greatly serve to illustrate what has been said of mortal *Rigors*; for she was often seized in the Progress of the Disease with *Rigors*, which were always attended with pernicious Signs. The Case is as follows, 3 *Epid.* Sect. 2. *Ægr.* 12. "A Woman who lodged in the *Forum Mendacium*, after hard Labour with a male Child, was taken ill of a violent Fever, attended at first with a Thirst, Loathing, and Cardialgia; her Tongue was dry, her Stools were thin, and little in Quantity, and voided after much Pain and Gripings, and she had no Sleep. The next Day she felt somewhat of a *Rigor*, succeeded by a high Fever, and something of a cold Sweat about the Head. On the third Day, the Stools were crude, thin, much in Quantity, and voided with Pain. On the fourth she had a new Fit of a *Rigor*, all the Symptoms were exasperated, and she could take no Sleep. On the fifth she was very ill; and on the sixth continued in the same State, and voided Plenty of liquid Matter by Stool. On the seventh Day she was seized with another Fit of a *Rigor*, succeeded by a high Fever, a great Thirst, and continual Tossing, and towards Night, with a cold Sweat all over the Body, with a Coldness of the extreme Parts, into which the Heat could not be recalled. At Night she had another Fit of a *Rigor*, and her extreme Parts recovered no Warmth; she had no Sleep, was a little delirious, but soon came to herself again. On the eighth, about Noon, she recovered Heat, had a Thirst, with a Coma, and a Nausea, and vomited up some bilious yellowish Matter, tho' but little in Quantity; she had a bad Night, passed it without Sleep, and great Plenty of Urine came from her involuntarily. On the ninth, all the Symptoms were

“remitted, and she was inclined to a Cerna; in the Evening she had something of a *Rigor*, and vomited a little bilious Matter. On the tenth she had a new Fit of a *Rigor*, the Fever was exasperated, and she had no Sleep; in the Morning she made great Plenty of Water, which had no Hypostasis, and her extreme Parts recovered Heat. On the eleventh she vomited virulent, bilious Matter, and soon after was again seized with a *Rigor*, and a Refrigeration of the extreme Parts; towards Evening she fell into a Sweat with a *Rigor*, vomited much, and had a very bad Night. On the twelfth she vomited up much black, fetid Matter, and was much molested with the Hiccup, and a Thirst. On the thirteenth she was seized with a *Rigor*, and vomitings of much black Matter, which had a very ill Smell; about Noon she lost her Voice. On the fourteenth Blood came from her Nose, and she died. The whole Course of the Disease was a Looseness and a Horror. The Woman was about seventeen Years of Age.” *Prosper Alpinus de Presag. Vit. & Mort. Ægrot.*

RIGOR. A Stiffness or Inflexibility.

RIGOR NERVORUM, is the same as Tetanus.

RILLUS, is defined by *Rulandus*, a chemical Utenfil, into which melted Metals are poured, in order to impart to them an oblong Form.

RIMA. A Fissure, or Chap. In Anatomy it imports, the Fissure of the Female Pudenda.

RIMULA. The Aperture of the Glottis.

RINÆUS MUSCULUS. The Name of a Muscle of the Nose mentioned by *Douglas*, which he, also, calls *Nasalis*, and says it arises fleshy from the Extremity of the Os Nasi, and adjacent Part of the Os Maxillare.

It is inserted into all the Cartilages of the Ala.

Its Use is to open and dilate the Nostril, by pulling that Part outwards.

RINAR. *Rulandus* explains this, *Limatura*.

RIPARIUS. An Epithet of Animals which frequent the Banks of Rivers, or the Sea-shore.

RISIGALLUM. The same as AURIPIGMENTUM.

RISTORUM. A kind of nourishing Aliment prepar'd of the Yolks of Eggs. It seems to be a Sort of Egg Caudle.

RISUS. Laughter. See RESPIRATIO. See SARDONIUS.

RITRO, Offic. *Echinops minor*, J. B. 3. 72. Tourn. Infl. 463. *Carduus globosus minor*, Ger. 990. Emac. 1151. Park. Parad. 332. *Carduus Sphærocephalus cæruleus minor*, C. B. 381. Raii Hist. 1. 383. *Scabiosa Cardui folio Sphærocephala humilis*, Herm. Cat. 539. LITTLE GLOBE THISTLE.

It is cultivated in Gardens, and flowers in June. The Root is used, and possesses the same Virtues as that of the ECHINOPUS MAJOR.

RIWAND, and RIWANDTZINI, are Arabic Words, importing Rhubarb.

ROADES, in *Paracelsus*, is an unskilful, simple Physician.

ROB. See DECOCTIO.

ROBERTIANUM. See GERANIUM.

ROBES. Vinegar. *Rulandus*.

ROBIGO. The same as RUBIGO.

ROBORANTIA. Strengthening Medicines. See ANALEPTICA.

ROBUR. The Oak. See QUERCUS.

ROBYS. An Epithet for the best Sort of Wheaten Bread. *Castellus from Langius*.

ROCHETIA. See FUCUS.

ROCHETTA. *Antonio Neri* informs us, that *Polverine* or *Rochetta*, which comes from the Levant and Syria, is the Ashes of a certain Herb growing there in Abundance: There is no doubt but that it makes a much whiter Salt than *Barillia* of Spain, and therefore when you would make a Crystal very perfect, make it of Sat extract'd from *Polverine* or *Rochetta* of the Levant. For tho' *Barillia* yields more Salt, yet Crystal made of it inclines to a Blueness, and has not the Whiteness and Fairness of that made of *Polverine*.

Upon this *Merret* remarks, that *Polverine* and *Rochetta* are the same Thing, and are nothing more than Ashes extract'd from the same Plant, but differing in Goodness. The Name of the latter is wholly unknown to our Glass-Houses, and has now no Distinction at *Moran* itself. The Name of *Polverine* is still kept, and 'tis given to all Ashes which come from the Levant to make Glasses with. The Reason then of their different Names seems to be, that the *Polverine* was that which was brought in small Powder, and the other in hard Pieces or Stones, and therefore named *Rochetta*. And indeed the Workmen observe, that the harder and bigger Lumps yield a whiter and stronger Salt than that which comes over in small Pieces or Powder. And whether this proceeds from the Seasons of their Growth, Gathering and Burning, or from some Sophistication from other fixed Salts mixed with it, or from Sea-Salt or other Moisture with which they are

damaged, I determine not. But certain it is, that to make the strongest Salt, and such as will come into hard and stony Lumps, they make a Lee of their first burnt Ashes, and therewith water the Herbs to be next burnt, and so water the Herbs with new Lees at every Burning, and this will make a most strong Pot-ash for Soap-boylers and Dyers: Tho' I cannot affirm that this Method has been practised in making *Rochetta*, and that it is now omitted.

ROCHUM ALUMEN. Rock Alum.

RODODENDION. See NERIUM, and ÆGOLETHRON.

ROGGA. A Name for the *Secale*; *Hybernum*, vel *majus*.

ROHOB. The same as ROB.

ROMANA ADRIANA ANTIDOTUS. The Name of an Antidote described by *Nicolaus Myrepsus*. Sect. 1. C. 5.

RONAS. A Root used much by the Persians, for dying a red Colour. I don't know that it is used in Medicine.

RONDELETIA.

The Characters are;

It hath a Salver shaped Flower, consisting of one Leaf, which is tubulous, and rests on the Empalement; which Empalement afterwards becomes a roundish coronated Fruit, divided into two Cells, containing many small Seeds.

Miller mentions but one Sort of this Plant, which is, *Rondeletia arborescens, tini facie*, Plum. Nou. Gen.

This Plant was discovered by Father *Plumier*, in *America*, who gave it this Name in Honour to *Gulielmus Rondeletius*, a famous Physician of *Montpelier*.

The Seeds of this Plant were sent to England by Mr. *Robert Millar* Surgeon, who collected them on the North-side of the Island of Jamaica, where the Trees grow plentifully, as also in several Parts of the Spanish West Indies. *Miller's Dictionary*, Vol. II.

RONDESSA. A Sort of American Cat, which is said to take her Young into her Belly, and bring them out again at Pleasure. *Castellus* from Eph. N. C.

RORELLA. A Name for the *Ros Solis*.

RORIFERUS. Roriferous. An Epithet applied by some Anatomists, to the lacteal and lymphatic Vessels.

ROS. Dew.

If in a long continued Summer's Drought, the Surface of the Earth comes to be greatly parched with the Heat of the Sun, not only Water, but, also, other less volatile Substances, of an unctuous and saline Nature, will thus be raised to some Height into the Atmosphere, tho' invisibly, so long as such Exhalations are agitated by the Sun's Heat, which coming to lessen towards the Evening, the Air soon grows cooler; while at the same time, the Earth retaining the Heat much longer than the Air, still continues to breath out hot Exhalations, whence arises a white, dense, visible Vapour, hotter below than above; this Vapour appears, therefore, first in low watery Places, thence gradually diffuses itself, so as in the Night to cover the Surface of the Earth with a Mist, which is dissipated by the Rising Sun. This Moisture, called by the Name of Dew, is a very compound Substance; nor can we assert any Thing that will hold universally true of its peculiar Nature. It must needs be a Chaos, as it is a Collection of all Sorts of volatile Particles, promiscuously jumbled together by the Heat of the Sun, acting upon the Earth; it must, also, be different in different Parts of the Earth, according as different Kinds of Particles lodge therein. Thus in large Tracts of gravelly or Heath Ground, which lie dry and high, it will be small in Quantity, and almost totally aqueous; as in fat bituminous Earths, near Marshes, and standing Waters, it is far different in Quantity and Quality, and prejudicial to Health; whence it is no Wonder that Chymists, in their analysing of Dew, should find such different Results, that scarcely any two are agreed about them. Certainly they who seek for the Spirit of Life, the universal Solvent, the Mercury of Life, the Nitre and Steel of *Sendiogius*, in Dew, seem not to understand them right; it is better to say, that Dew is of a subtle saponaceous Nature, capable of supporting Vegetables. Some Dew that had been collected in a certain Part of the Earth, has afforded a Liquor, by Distillation, which struck the Colours of the Rain-bow upon Glass, so strong as not to be effaced by Friction, alkaline Lixiviums, or *Aqua Regia*; it, also, burnt like Spirit of Wine. Again, some distilled Dew having been digested with gentle Heat, for eight Days, and then rectified six Times over, till it was exceedingly subtle, is reported to have broke three Glass Vessels successively, tho' it still remained perfectly insipid. Again, some Dew is described to be like a yellowish Butter, that melts by being rubbed upon the Hand, yet grows hard and dry with a moderate Heat, being of a fetid Odour, and to be found in pretty large Lumps in the Night, especially in the Spring and Winter. The Nature of Dew, also, differs surprisingly with the different Seasons of the Year, and the various Successions of Meteors; hence exceedingly small Seeds of Vegetables, and invisible

R O S

Eggs of minute Animals, with numerous other Things coming to be digested, fermented or putrefied therein, it must afford many very different Productions by Distillation; whence Chemists have formed very odd Opinions about it. We can only say that the greatest Part of it is Water; and that the other Parts cannot be ascertained on Account of their infinite Variety. *Boerhaave's Chemistry.*

ROSA.

The Characters are;

It is a Shrub generally covered with a prickly or thorny Bark; the Leaves are pinnated, and end in an odd Lobe. The Extremity of the Pedicle forms an Ovary almost spherical, and surrounded on the Top with a Crown deeply cut into five Parts, radiated, and with its five long lacinated Segments resembling a Calyx. The Flower is pentapetalous, the Petals arising from the internal Margin of the Calyx; whence also are produced very numerous Stamina. The Ovary produces from the Center of the Apex a small Head, adorned with a Multitude of fimbriated Tubes, and becomes an uncapular Fruit, full of vast Numbers of angulous hairy Seeds, and furnished with a foliaceous Apex.

Boerhaave mentions thirty-nine, and *Miller* forty-nine Species of Roses; but those principally used in Medicine are the seven following:

1. ROSA CANINA. *The Common Briar or Dogs-Rose.* See CYNOSBATUS.

2. ROSA DAMASCENA, *pallida*, Offic. *Rosa Provincialis*, five *Damascena*, Ger. 1079. Emac. 1261. *Rosa Damascena*, Park. Theat. 1017. Parad. 413. Raii Hist. 2. 1468. *Rosa Purpurea*, C. B. P. 481. Tourn. Inst. 637. *Rosa Damascena, flore pleno*, Boerh. Ind. A. 2. 152. *Rosa rubella, flore-majore, multiplicato, five pleno, incarnata vulgo*, J. B. 2. 36. *An Rosa incarnata vulgaris*, Mont. Ind. 51. THE DAMASK-ROSE.

The Damask-Rose grows not so tall, nor so large as the white Rose, but yet taller and fuller of Prickles than the red, especially about the Stalk. The Leaves are whiter and more hairy. The Flowers are less double than the *Provence* Rose, and the Beards prickly; they are of a pale red Colour, and of a most pleasant Scent.

The Flowers are of a gentle cathartic Nature, purging cholic and serous Humours, being given to Children and weakly Persons, and mixed frequently with stronger Cathartics.

Official Preparations of Damask-Roses, are the *Syrupus à Succo Rosarum*, *Syrupus Rosaceus solutivus*, the *Aqua Rosarum Damascenarum*, and the *Electuarium à Succo Rosarum*. *Miller's Bot. Off.*

AQUA ROSARUM DAMASCENARUM. WATER OF DAMASK-ROSES. See AQUA.

ELECTUARIUM E SUCCO ROSARUM. ELECTUARY OF THE JUICE OF ROSES. See ELECTUARIUM.

SYRUPUS E SUCCO ROSARUM.

Syrup of the Juice of Roses.

This is prepared without any Infusion, from the expressed Juice of the Flowers, with the same Proportions of Sugar to the Quantity of Juice as directed in the *Syrupus Rosaceus Solutivus*.

SYRUPUS ROSACEUS SOLUTIVUS.

Solutive Syrup of Roses.

Take of boiling Water, four Pound; stir into it as much fresh Damask-Rose Leaves as it will contain; let them stand together in a warm Infusion for twelve Hours, and then press it out strongly. Let this again be heated, and new Flowers stirred in, and steeped as before; and proceed to a third Repetition of the same, every Time increasing the Quantity of the Flowers put in, in proportion to the Liquor, which every time will increase almost one Third. When this is all finished, to six Parts of the Liquor put four Parts of white Sugar, and boil into a Syrup with a Bath-Heat, according to Art.

This is the same as in the former Dispensatory of the College, but at first was ordered to be repeated nine times in the Infusion; but the Shops have been hitherto most accustomed to make it from the clarified Juice of the Roses, or from their Residuum after Distillation.

3. ROSA PALLIDA, Offic. Ind. Med. 98. Chomel. 12. *Rosa rubra pallidior*, C. B. P. 481. *Rosa balasericæ*, Lob. Icon. 2. 207. *Rosa sativa*, IV. Dod. Pempt. 187. *Dale* makes a Doubt whether this be not of the same Species with the Damask-Rose.

R O S

4. ROSA PALLIDA, Offic. *Rosa maxima multiplex*, C. B. P. 481. Tourn. Inst. 637. *Rosa Hollandica, five Batava*, Ger. 1081. Emac. 1262. *Rosa Provincialis, five Hollandica Damascena*, Park. Parad. 413. Raii Hist. 2. 1469. *Rosa Hollandica rubella plena quibusdam, centifolia, spinosa frutice*, J. B. 2. 37. THE DAMASK PROVINCE ROSE.

It is common in Gardens, and flowers in July; the Virtues are the same with those of the common Damask-Rose.

5. ROSA RUBRA, Offic. Ger. 1079. Emac. 1261. Raii Hist. 2. 1468. *Rosa rubra multiplex*, C. B. P. 481. Tourn. Inst. 636. *Rosa rubra Anglica*, Park. Parad. 412. *Rosa rubra valde plena*, J. B. 2. 34. THE RED-ROSE.

This Rose generally grows in lower Bushes than the White Damask Roses; the Flowers have very few Prickles on the Stalks, and the Calyx or Beards are shorter and smoother; they are less double than either the White or Damask, having a great many yellow Anthera in the Middle.

The Red-Rose is more binding and restraining than the Damask and White, and good against all Kinds of Fluxes; they strengthen the Stomach, prevent Vomiting, and stop tickling Coughs, by preventing the Defluxion of Rheum, and are of great Service in Consumptions. The Antheræ or Apices are accounted Cordial, though they are but seldom used.

Official Preparations are, a *Simple Rose-Water*, *Conserve Rosarum*, *Saccharum Rosarum*, *Syrupus à Rosis siccis*, *Mel Rosarum*, *Oleum Rosarum*, *Unguentum Rosarum*, *Tinctura Rosarum*, & *Species Aromaticum Rosatum*. *Miller's Bot. Off.*

The Parts in Use are the Flowers and the Antheræ, which are yellow Floscules, which adhere to the Capillaments in the Middle of the Flowers.

The Flowers are of principal Use in Fluxes, Fevers, Thirst, and Loss of Appetite. Outwardly they are of Service in Vomiting, Head-ach, want of Sleep, Pains of the Ears and Gums, and of the Anus; in Ulcers of the Mouth, Fauces and Eyes. The Antheræ dried, are used in Dentifrices for Astringency of the Gums. *Dale.*

Roses are of singular Service in Medicine, since the Water distilled from them in Consequence of its fragrant Oil, is highly friendly to Nature; and whether internally exhibited, or externally applied, excellently calculated for recruiting the Strength, and alleviating Pains and Inflammations in all hot Diseases. Conserve of Roses, by means of its cordial and astringent Virtues, is peculiarly adapted and appropriated to pithical and hectic Patients. Vinegar of Roses, mixed with the Spirit and Water of Roses, adding Nitre and a little Camphire, makes an Epithem, which, when applied to the Head, I have, from repeated Experience, found to be of incomparable Efficacy in removing Head-achs, preventing Deliriums, and stopping immoderate Hemorrhages from the Nose. *Hoffman de Præst. Remed. Domest.*

CONSERVA ROSARUM. See CONSERVA.

MEL ROSARUM. Honey of ROSES. See MEL.

OLEUM ROSARUM. See OLEUM.

SACCHARUM ROSATUM TABULATUM.

Lozenge-Sugar with Roses.

Take of Red-Rose Leaves without the white Heels, and hastily dried in the Sun, one Ounce; of the whitest Sugar, one Pound. Melt the Sugar over the Fire in Rose-Water, and the Juice of the same, each two Ounces; and after due Evaporation, mix with it the Roses in fine Powder, and pour it upon a Marble, so as to make it into Lozenges.

SPECIES AROMATICUM ROSATUM. See AROMATICA.

SYRUPUS E ROSIS SICCIS.

Syrup of dried Roses.

Take two Quarts of hot Spring-Water, and in it infuse half a Pound of Rose-Leaves, hastily dried in the Sun; the next Day press out the Liquor, and with two Pounds of Sugar boil it up to a Syrup.

TINCTURA ROSARUM RUBRARUM.

Tincture of Red Roses.

Take half an Ounce of Red-Rose Leaves, well cleared of the white Heels, and thirty Drops of Oil of Vitriol; pour upon them in a glazed earthen Vessel two Pints and an half of boiling Spring-Water, and let them stand close covered for three Hours; then strain off the Liquor, and put to it three Ounces of fine Sugar-Candy.

[* M]

UN-

R O S

UNGUENTUM ROSATUM.

Ointment of Roses.

Take of Hogs-Lard, cleared from all its Membranes, and well washed, one Pound; and add to it one Pound of fresh Red-Roses; which suffer to stand together for seven Days; then boil them over a gentle Fire, and press out the Lard; then macerate again with fresh Roses the same Space of Time, and boil and strain as before. Lastly, put to it six Ounces of the Juice of Red-Roses; of Oil of sweet Almonds two Ounces, and boil over a slow Fire, to a Consumption of all the Juice; then strain it again, that it may become an Ointment.

6. ROSA ALBA, Offic. Ger. 1079. Emac. 1260. Raii Hist. 2. 1473. *Rosa Anglica alba*, Park. Parad. 412. *Rosa alba vulgaris major*, C. B. P. 482. Tourn. Inst. 637. *Rosa alba, flore pleno*, Boerh. Ind. A. 2. 251. *Rosa candida plena*, J. B. 2. 44. THE WHITE-ROSE.

The White-Rose Tree grows taller than most other Kinds of Roses, having fewer Prickles on the Branches, and those pretty large; the Leaves are of a dark green Colour; the Flowers are white, and more double, or fuller of Leaves than the Damask or Red, having a less fragrant Scent than either of them.

The Flowers only are used, being drying, binding and cooling, and the Water distilled from them, is much used in Collyriums for sore inflamed Eyes, being the only officinal Preparation from them. *Miller's Bot. Off.*

7. ROSA MOSCHATA, simpliciflora. C. B. P. 482. Tourn. Inst. 637. *Rosa Moschata minor, flore simpliciflora*, J. B. 2. 45. Raii Hist. 2. 1474. *Rosa Moschata simplex*, Park. Parad. 417. THE MUSK-ROSE.

It grows in warm Places, but was never used among us; it purges violently.

ROSA HIERICHUNTICA. A Name for the *Myagrum*; *ex Sumatra*, & *Syria*; *femine spinosa*, *simili Capiti Aviculæ*.

ROSALIA. A Name for the Measles; or for a Distemper resembling the Measles, consisting in Petechial Eruptions, or Asperities of the Skin. *Castellus* from *Martianus*.

ROSBOTH. A soft Excrecence of a hard Part. *Castellus* from *Avicenna*.

ROSCA. An *Erysipelas*. *Rulandus*.

ROSCOLÆ. The Measles.

ROSIO. Corrosion.

ROSMADIAN. Mercury of the Philosophers.

ROSMARINUS.

The Characters are;

It is a verticillate Plant, with a labiated Flower, consisting of one Leaf, whose upper Lip or Crest is cut into two Parts, and turns up backwards, with crooked Stamina, or Chives; but the under Lip, or Beard, is divided into three Parts, the middle Segment being hollow, like a Spoon; out of the two or three teeth'd Flower-Cup rises the Pointal, attended as it were by four Embryos, which afterwards turn to so many Seeds, that are roundish, and are inclosed in the Flower-Cup.

Boerhaave mentions six Species of *Rosmarinus*, which are;

1. *Rosmarinus*; *hortensis*; *angustiore folio*. C. B. P. 217. Tourn. Inst. 195. Boerh. Ind. A. 179. *Rosmarinus*, Offic. *Rosmarinum coronarium*, Ger. 1109. Emac. 1292. *Libanotis coronaria*, *sive Rosmarinum vulgare*, Park. Theat. 71. ROSEMARY.

This is a Plant very well known, growing almost in every Garden. It grows larger and more woody in England than in many other Countries, having woody tough Branches, with long narrow thick Leaves, that are hoary and somewhat hollow underneath, and green above; among these grow the Flowers several together in Clusters, of a pale purple Colour, each having a large Galea, and is set in a thick, hoary, five-corner'd Calyx, at the Bottom of which lie four round Seeds. It grows wild in Spain, and the Southern Parts of France; but with us is planted in Gardens, and flowers in April. The Leaves and Flowers are used.

Rosemary is a Plant of great Service in Affections of the Head and Nerves, helping the Apoplexy, Palsy, and all Kinds of Convulsions, Pains, and Dizziness of the Head. It strengthens the Sight and Memory, and opens Obstructions of the Liver and Spleen. The dried Herb burnt is good to sweeten the Air, and correct noxious filthy Smells.

Official Preparations are the *Conserve Anthos*, *Aqua Regina Hungaria*, and the Chymical Oil and fixed Salt. *Miller's Bot. Off.*

Rosemary, with respect to its Virtues, bears a great Affinity to Spike and Lavender; and as it abounds with a penetrating balsamic Oil, its Spirit proves equally efficacious in Disorders of the Head, with Spirit of Lavender. An Infusion

R O S

of Rosemary in Water or Wine, is highly beneficial in the *Fluor albus*, and Sterility proceeding from it, in Hoarseness, in Asthma's and a disagreeable Breath. *Arnaldus de Villa Nova* affirms, that he has often seen Cancers, Gangrenes, and Fistulas dried up and perfectly cured, tho' they would yield to no other Medicines, by frequently washing them with an Infusion of Rosemary in Spirit of Wine. *Hoffman de Præst. Remed. Domest.*

AQUA HUNGARICA.

Hungary, or the Queen of Hungary's Water.

Take of Flowers of Rosemary, twenty Ounces; rectified Spirit of Wine, thirty Ounces; let them infuse for some Days, then draw off as much as there was Spirit put in.

This is most conveniently made by the Copper Alembic, taking Care that the Receiver is closed with a Bladder to the end of the Worm. And this Way common Spirit may be as well used as the rectified, observing not to draw it so low as to be cloudy; for after a certain Standard, the oily Part of the Flowers, which is considerable, will turn it milky. What runs afterwards, as a great deal will, which yet smells and tastes strong of the Flowers, may either be kept to throw into the Still again, when the same is to be made, or used in the Shop for a small Spirit of Rosemary; and the last Runnings of all may pass for a good simple Water, under the same Title. The College have rejected this out of their new Dispensatory; and indeed what is imported from France, and Countries where the Rosemary most abounds, is so good and cheap that it is hardly worth any Body's while to make it here, unless the Wholesale Dealers: For these Gentlemen can in an Instant brew the largest Quantity, at a very small Expence. Their Way is, to impregnate rectified Spirit of Wine with chymical Oil of Rosemary and that of Lavender, and this, with a French Title, they palm upon the Nation for right French Hungary Water.

CONSERVA ANTHOS. *Conserve of Rosemary. Flowers.* See CONSERVA.

For the chemical Oil of Rosemary, see OLEUM.

For the fixed Salt, see SAL.

2. *Rosmarinus*; *striatus*; *sive aureus*. Park. Theat. 74.

3. *Rosmarinus*; *hortensis*; *angustiore folio*; *argenteus*. H. R. Par. 158.

4. *Rosmarinus*; *spontaneus*, *folio eleganter variegato*. H. R. D.

5. *Rosmarinus*; *spontaneus*; *sive latifolius*. C. B. P. 217.

6. *Rosmarinus*; *spontaneus*; *sive latifolius*, *folio Apice inhamum curvato*. Boerh. Ind. Alt. Plant. Vol. 1.

Rosemary Leaves are antihysterical, uterine, emmenagogue and cephalic; when used in Fomentations and Cataplasms, they are of an alleviating and detergent Nature. Rosemary, in consequence of its heating and dissipating Quality, is an excellent Remedy in a *Fluor albus* arising from Languor. The Leaves bruised, made up in Form of a Paste, and swallowed, powerfully strengthen the Stomach and rouse the Spirits. This Plant is an excellent Medicine in Disorders of the Head and Nerves, such as a Vertigo, a Carus, an Epilepsy, a Palsy, a Cholic, hysterical Fits, and Weakness of Memory. Its Leaves, when put in a Bath, are excellent against Barrenness, render the Sight clear, remove a disagreeable Breath and Difficulty of Breathing, and resolve Obstructions of the Liver and Spleen, for which Reason they are highly beneficial in the Jaundice; externally they contribute to strengthen the Nerves, prevent Gangrenes, and resolve cold Humours. In Catarrhs, and the Disorders arising from it, the Smell of this Plant is beneficial; Rosemary is produced in England, Spain, and some Parts of France. Its Leaves smell like Camphire; and from its Flowers are obtained a Spirit, an Oil, and a Quintessence. The Water distilled from its Flowers is, *The Queen of Hungary's Water*, so called because a certain Hermit taught its Composition to that Queen. This Water is excellent in *Deliriums*, and what we call a Sinking of the Spirits. Melancholic and hysterical Patients are greatly relieved and exhilarated by the grateful Smell of this Water, which is, also, excellent for those who faint upon seeing the Blood spring from an opened Vein; for it excellently revives the Spirits, when applied to the Nose, an Organ of all others the most easily affected. In the same Case, it is taken internally in Rain or Spring Water, and externally the Temples, Nostrils, and nervous or muscular Parts, are to be rubb'd with this Water. In Contusions, Wounds, Tooth-achs, Gangrenes, and Congestions of cold Humours, this Water is used with great Success. Of Rosemary Flowers, gathered in the Middle of the Day, bruised with Sugar, and afterwards preserved from the Air in a Galley-pot, is made the celebrated English Conserve, known in the Shops by the Name of *Conserve Florum Anthos*. This Conserve is an excellent Remedy in Vertigos, arising

arising from a cold Cause, as also in cold Distempers. Hence 'tis an excellent Stomachic, and proper in that Disorder of the Eyes called *Lemia Lippea*, when not proceeding from an Inflammation. The Leaves of Rosemary, boiled in Wine, strengthen the Nerves. A Conserve is also made of its Leaves for the Use of the Poor. The Oil obtained from the Flowers and Leaves of this Plant is cephalic, anti-scorbutic, emmenagogue, and in Virtues greatly approaches to the Savin. It is an excellent Medicine in Epilepsies, cures the various Symptoms of the hysteric Passion, and promotes a Discharge of the Lochia and Menfes; for when the Foetus or Menfes are retained, 'tis customary among the Women to exhibit some Drops of this Oil in Wine. *Hist. Plant. Ascript. Boerhaav.*

ROSMARUS. The Sea-Cow. See MANATI.

ROSANIA or ROSALIA. The same as ROSEOLÆ.

ROS SOLIS.

The Characters are;

The Leaves are thick set with bristly Hairs distilling Drops. The End of the Pedicle becomes an oblong tubulated Calyx, divided into five acute Segments, within which is seated a roseaceous pentapetalous Flower, furnished with five Stamina. The Ovary from the Center of the Calyx, within the Flower, is of a conic, acuminate Figure, gaping when mature, and full of a Multitude of Seeds.

Boerhaave mentions two Sorts of *Ros Solis*, which are;

1. *Ros Solis*; folio subrotundo. *C. B. P.* 357. *Raii Hist.* 2. 1100. *Synop.* 3. 356. *Tourn. Inst.* 245. *Boerb. Ind. A.* 216. *Ger. Emac.* 1556. *Ros Solis*, *Offic. J. B.* 3. 761. *Ros Solis major*, *Ger.* 1366. *Ros Solis five Rorella vel Rosa Solis*, *Park. Theat.* 1052. *Ros Solis, Rosa Solis, Sponsa Solis, Rorida & Rorella etiam dicta.* *Chab.* 559. ROSA SOLIS.

This is a small low Plant, having a little fibrous Root, from which spring small round hollowish Leaves, on Footstalks of about an Inch in Length, covered and fringed with short red Hairs or Bristles, which make the whole Leaf appear red; from among these arise naked Stalks three or four Inches high, having several small five-leav'd Flowers on the Top, standing one Way, which are succeeded by little longish Seed Vessels, containing very small Seed; it grows in boggy Grounds, and flowers in June and July.

Rosa Solis is commended by some as a great Cordial, and good for Consumptions, Convulsions, and the Plague. Formerly a cordial Water, in which this Herb, with several Spices, was a principal Ingredient, was in great Repute, under the Name of *Rosa Solis*, tho' now almost out of Date. *Miller's Bot. Off.*

Some Authors affirm it is a Caustic, and improper for internal Use.

2. *Ros Solis*: folio oblongo. *C. B. P.* 357. *Boerb. Ind. Alt. Plant. Vol. I.*

ROS SYRIACUS. The same as ELÆOMELI; which see. ROSTRIFORMIS. The same as CORACOIDES.

ROSTRUM. The Beak of a Bird. Hence several Chirurgical Instruments are, from their Similitude, called by this Name. Thus there is the *Rostrum Corvi*, the Crows Bill Forceps; the *Rostrum Gruis*, Crane's Bill; the *Rostrum Psittacinum*, Parrot's Bill; and the *Rostrum Vulturis*, Vulture's Bill. *Rostrum Leporinum*, is a Hare Lip.

ROTANG. The Name of a Species of Reed mentioned by *Piso*.

ROTATOIRES. The Trochanters. See TROCHANTERES. The Alchymists are called *Rotatores* by Way of Derision.

ROTLA, in *Paracelsus*, is the same as RUBRICA.

ROTULA. The Patella, or Cap of the Knee. In Pharmacy, *Rotula* is a Troche.

ROTUMHA. A Vessel like a Cucurbit. *Rulandus*.

ROTUNDUS MAJOR. The Name of a Muscle of the Shoulder. See TERES MAJOR.

ROTUNDUS MINOR. See TERES MINOR.

ROUCOU. See ACHIOTL.

RUB, in *Rulandus*, is the same as RON.

RUBEA ICTERITIA, in *Paracelsus*, is an Erysipelas.

RUBECULA. *Offic. Jonf. de Avib.* 87. *Mer.* 178. *Bellon. des Oyse.* 349. *Gesn. de Avib.* 681. *Charlt. Exer.* 97. *Erithacus five Rubecula*, *Aldrov. Ornith.* 2. 742. *Rubecula five Erithacus*, *Raii Ornith.* 219. *Ejusd. Synop. A.* 78. THE ROBIN-RED-BREAST, or RUDDOCK.

This Bird, when eaten, is by some esteemed to excite Venereal Inclinations.

RUBEFACIENTIA. Topics which excite a Redness of the Skin; the same as PHÆNIGMI.

RUBELLA. This is defined by *Dornæus*, a spiritual Essence, extracting a Tincture from Bodies by its resolute Power.

RUBELLIANÆ. The Berries of the white Bryony. *Rhodius in Scribon. Larg. N°.* 249.

RUBELLIO. The Sea-Roach.

This Fish has two sharp Fins on the Back, and feeds upon small Crabs and other little Fishes; it is more esteemed in Winter than in Summer; and this may be occasioned by its different Way of feeding in these two Seasons; for in Winter it keeps in the open Sea, but in Summer it draws near the Shore; or, according to some Authors, the Difference may arise from its spawning in the Summer.

This Roach is easy of Digestion, because 'tis tender, delicate, not very compact in its Parts, and has but little gross Juice. It is nourishing, restorative, and promotes the Semen, by Reason of the balsamic, oily Parts, and volatile Salts with which it abounds. It is, also, reckoned good for stopping a Looseness; operating on this Occasion, by calming and suppressing the sharp and pungent Humours, which cause this Inconvenience, by its oily Principles. It agrees, especially in Winter, with any Age and Constitution. *Lemery on Foods.*

RUBEOLA.

The Characters are;

The Leaves grow four, or more together; the Flower is monopetalous, Funnel shap'd, and quadrifid, resting upon one, or a double Ovary; the Ovary becomes a Fruit containing two Seeds.

Boerhaave mentions two Species of *Rubeola*, which are;

1. *Rubeola*; latiore folio. *T.* 130. *Rubia, latifolia, spicata.* *C. B. P.* 334. *Pseudo-Rubia, latifolia, spicata*, *M. H.* 3. 333.
2. *Rubeola*; angustiore folio. *T.* 130. *Pseudo-Rubia, spicata, angustifolia.* *M. H.* 3. 333. *Boerb. Ind. Alt. Plant. Vol. I.*

This Plant is recommended in a Quinsy. *Hist. Plant. Boerb. Ascript.*

RUBETA. The Toad. See BUFO.

RUBIA.

The Characters are;

The Leaves are rough; the Fruit consists of two succulent Berries, which contain each an umbilicated Seed.

Boerhaave mentions four Sorts of *Rubia*, which are;

1. *Rubia*; Tinctorum; sativa, *C. B. P.* 333. *Boerb. Ind. A.* 147. *Tourn. Inst.* 114. *Rubia Tinctorum*, *Offic. Ger.* 957. *Emac.* 1118. *Raii Hist.* 1. 480. *Synop.* 3. 223. *Rubia sativa*, *J. B.* 3. 714. *Rubia major five bartenfis*, *Park. Theat.* 274. Madder.

The Roots of Madder are about as thick as a large Goose-Quill, round and much branched, of a reddish Colour, clear, and somewhat transparent, having a small, slender, hard, rough String in the Middle, of a sweetish Taste, with a little Bitterness; from these spring many square, rough, weak Stalks, full of Joints, about which are set five or six long sharp-pointed Leaves, that are broadest in the Middle, and narrow at both Ends, rough almost to Prickliness. The Flowers grow in long Spikes, coming forth at the Joints with the Leaves, small and yellow, of one Leaf cut into four Segments, each succeeded by two small, moist, blackish Berries, containing two round umbilicated Seeds. It is planted in Fields and Gardens, and flowers in May.

The Roots of Madder are opening and attenuating, good for Obstructions of the Liver, help the Jaundice and Dropsy, and cleanse the Kidneys of tough and slimy Humours, and are of Use against the Stone and Strangury. They are accounted good to dissolve congealed Blood, and to be serviceable in Wounds and Contusions. A great Quantity of the dried Roots are used by the Dyers to dye a red Colour. *Miller's Bot. Off.*

2. *Rubia*; sylvestris, aspera; quæ Sylvestris Dioscoridi. *C. B. P.* 333. *Raii Hist.* 1. 480. *Synop.* 3. 223. *Boerb. Ind. A.* 147. *Rubia sylvestris & Rubeola*, *Offic. Rubia sylvestris*, *Park. Theat.* 274. WILD Madder.

It grows wild in Hedges. The Root agrees in Virtues with the *Rubia Tinctorum Sativa*.

3. *Rubia*; sylvestris; Monspeulana; major. *J. B.* 3. 715.

4. *Rubia*; quadrifolia; asperima; lucida; peregrina. *Boerb. Ind. Alt. Plant. Vol. I.*

RUBIA SYNANCHICA, *Offic. Rubia Cynanchica*, *C. B. P.* 333. *J. B.* 3. 723. *Raii Hist.* 1. 485. *Rubeola vulgaris quadrifolia, lævis, floribus purpurascens*, *Tourn. Inst.* 130. *Raii Synop.* 3. 225. *Synanchica Lugdunensis*, *Ger. Emac.* 1120. *Asperula repens Gesneri, seu saxifraga altera Casalpini*, *Park. Theat.* 453. SQUINANCY-WORT.

It has a black, thick, woody Root, which runs to a great Depth in the Earth, and is furnished with very numerous fine capillary Fibrils, divided into a Multitude of Heads, and shoots up many smooth, slender angulous Stalks, a Span in Length or more, clothed at the Joints, which are frequent near the Head of the Root, with four Leaves, very short and broad, so as that the Length is scarce the third Part of the

the Breadth. About the Middle of the Stalk the Joints are frequent, and the Leaves longer, narrower, sharper, and grow also by Fours. The Flowers on the Tops of the Stalks and Branches, form a kind of Umbellas, as in the *Valeriana*, and are expanded from an oblong Tube into four Segments, of a beautiful red Colour, and a pleasant Smell; sometimes they are white like those of the *Jasminum*, which they resemble in Colour and Smell, but are of the Size of the *Rha* of *Dioscorides*.

These are succeeded by a Coacervation of Seeds, which grow two together, and are rugous or rough, oblong, and bear like those of the *Phaseolus*, double the Size of those of the common *Gallium*, and when dry of a yellowish Colour.

It abounds in barren Places, and chalky and sunny Hills, as on *Gogmagog Hills*, *Suffex Downs*, and the like Situations.

It is supposed to be of extraordinary Efficacy in the *Squintancy*, (whence its Name) a *Quinsey*, whether inwardly or outwardly used. *Dale*.

RUBICILLA Offic. Mer. Pin. 176. Schw. A. 346. *Rubicilla*, *Pyrrhula*, Charlt. Exer. 17. *Rubicilla seu Pyrrhula*, Gefn. de Avib. 664. Will. Omith. 180. Raii Omith. 247. Ejusd. Synop. A. 86. *Pyrrhula seu Rubicilla*, Aldrov. Ornith. 2. 744. Ions. de Avib. 87. *Rubecula*, Bellon. des Oyse. 349. *Pyrrhula*, Scaliger. THE BULL-FINCH, ALP, or NOPE.

The Flesh of this Bird is recommended against the Cholic.

RUBIFICANTIA. The same as **RUBEFACIENTIA**.

RUBIGO. The Rust of Metals, or Mildew; or Smut of Corn.

RUBINUS. See **CARBUNCULUS**.

RUBRICA FABRILIS. Offic. Mer. Pin. 218. Matth. 1359. Calc. Mus. 134. Dougl. Ind. 80. *Rubrica*, Charlt. Foss. 2. Worm. 4. Aldrov. Mus. Metall. 257. *Rubrica Fabrilis Mollis*, Kentm. 8. RED OKER, RUDDLE, MARKING STONE.

This is an earthy, ponderous, and intensely red Substance, found in many Parts of *England*, and is used in vulnerary and drying Plaisters.

RUBRICA SINOPICA. Offic. Matth. 1354. *Rubrica Sinopis Agricol.* 583. *Terra Sinopiana*. Tourn. Voy. Ed. Lond. 2. 159. EARTH OF SINOPE.

This ought to be thick, heavy, and all of one Colour, resembling Liver; and when diluted with Water, it ought to diffuse itself therein.

It is dug out of the Earth in *Cappadocia*, is esteemed drying, and is said to restrain a *Diarrhæa*.

RUBUS.

The Characters are;

The Calyx is quinquifid; the Flower is rosaceous, pentapetalous, and furnished with a great Number of Stamina; the Placenta is in the Centre of the Calyx, to which it grows; the Fruit is round, and compos'd of a great Number of succulent *Acini*, fixed to the *Placenta*, and furnished with oblong Seeds, each being furnished with a long Tube.

Boerhaave mentions seven Species of *Rubus*, which are;

1. *Rubus vulgaris*; five *Rubus fructu nigro*. C. B. P. 479. Tourn. Inst. 614. Boerb. Ind. A. 2. 60. *Rubus vulgaris*, Offic. *Rubus*, Ger. 1089. Emac. 1272. *Rubus vulgaris major*, Park. Theat. 1013. *Rubus major fructu nigro*, J. B. 2. 57. Raii Hist. 2. 1639. Synop. 3. 467. THE BRAMBLE OR BLACK BERRY BUSH.

The Bramble has many long, creeping, angular, tough Branches, beset with a Multitude of very sharp crooked Thorns. The Leaves grow on the younger Twigs, usually five on one Foot Stalk in the lower Parts, and three on the upper Part next the Flowers, which grow in Clusters at the End of the Branches, consisting of five Leaves a-piece, in some Plants white, in others of a pale Red, with several Stamina in the Middle. The Fruit is a Cluster of *Acini*, green at first, then red, and when ripe, of a black Colour, and of a pleasant sweet Taste. It grows every where in the Hedges, flowering in *June* and *July*, and the Fruit is ripe at the latter End of *August* and in *September*. The Leaves and Fruit are used.

The Leaves are accounted Restringent, and are frequently prescribed in Gargarisms for sore Mouths and Throats; the unripe Fruit is very binding and restringent, useful for all Kinds of Fluxes and Bleeding; for Thrushes and sore Mouths. The Juice of the ripe Fruit made into Syrup, is accounted good against Heat of Urine. *Miller's Bot. Off.*

The Leaves of the Bramble are styptic, and of an earthy Taste; they stain the blue Paper with a deep red; the Fruit gives it a much deeper, and almost as deep as Alum; this Fruit is vinous, and of a very good Smell upon some Brambles, and insipid and disagreeable upon others. It is very probable that the acid Part of the natural Salt of the Earth, which in the Leaves is very little disengaged from the other Principles, is almost entirely freed from them in the Fruits, and produces there, with the terrestrial Parts, a Salt which resembles

Alum; so that the Antients had a great deal of Reason to use the Fruit of this Plant to bind. The Bramble is astringent, deterfive and absorbent; the Decoction of its Branches, as *Dioscorides* affirms, stops a Looseness and the Fluor albus. Its Leaves, chew'd, clear the Ulcers of the Gums and Mouth; bruised and applied to the Tetters they kill them, and cure the Piles. The Juice of the young Shoots thickened in the Sun, acts more powerfully. *Galen* was of the same Opinion; he made Use of the Leaves for Wounds; of the Flower and Fruit for spitting Blood, and of the Root for the Stone. *Pliny* has stolen out of *Dioscorides* what he has said of the Bramble; but he adds to the Virtues of this Plant that of being diuretic. This Plant is now used to cleanse and bind, taken either outwardly or inwardly. The Decoction of it is used for the Wounds of the Legs. *Tabernæmontanus* says, that a Bolster dipped in the Juice of the Bramble, and put into the Fundament, will stop the Flux of the Piles. Mr. Ray relates, that Dr. Needham set a great Value upon the Syrup of Black-berries for the Heat of Urine. A simple *Diamoron* may be prepared of it for the Diseases of the Throat. The Juice of the Bramble is an Ingredient in the *Diamoron Nilai usitatum*. The Gun-powder made of the Coals of this Plant is quicker and stronger than the common Sort. *Martyn's Tournefort*.

2. *Rubus*; repens fructu castio. C. B. P. 479. Tourn. Inst. 614. Boerb. Ind. A. 2. 60. Ger. Emac. 1271. *Chamaebatos* Offic. *Rubus minor Chamaerubus seu Humirubus*, Park. Theat. 1013. *Chamaerubus spinosus fructu cæruleo*. Jons. Dendr. 272. *Rubus minor fructu cæruleo*, J. B. 2. 59. Raii Hist. 2. 1640. Synop. 3. 467. THE DEW BERRY.

It is found amongst the Corn. It flowers in *May*. The Fruit becomes ripe in *Autumn*. The Fruit is in Use. It agrees in Virtues with the *Rubus vulgaris*, or the Bramble or Black-berry Bush. *Dale*.

3. *Rubus*; Idæus; spinosus; fructu albo. C. B. P. 479. J. B. 2. 59.

4. *Rubus*; Idæus; spinosus; fructu rubro. J. B. 2. 59. Raii Hist. 2. 1640. Synop. 3. 467. Boerb. Ind. A. 2. 69. *Rubus Idæus*, Offic. Ger. 1089. Emac. 1272. Park. Theat. 557. *Rubus Idæus spinosus*, C. B. P. 479. Tourn. Inst. 614. THE RASPBERRY-BUSH.

The Raspberry-Bush has slender brittle Stalks, covered with an ash-colour'd Bark, beset with small weak Prickles; it has five high-vein'd, oblong, sharp-pointed Leaves, growing upon one Foot-stalk, white underneath and green above, indented about the Edges. The Flowers consist of five Leaves, of a white Colour, with a Cast of Red; each of which is succeeded by a roundish Fruit made of a Cluster of *Acini*, for the most part red, but in some Plants they are of a white Colour. It grows wild in some Parts of *Wales*, and the North of *England*; and flowers in *May*, and the Fruit is ripe in *June*.

The Fruit, which is the only Part used, has a pleasant grateful Smell and Taste, is cordial, and strengthens the Stomach, stays Vomiting, is somewhat restraining, and accounted good to prevent Miscarriage.

The only Official Preparation is the *Syrupus de Rubo Idæo*. *Miller's Bot. Off.*

They make a Wine, a Syrup, a Ratafia, and a Vinegar, of the Fruits of this Plant. Spirituous Water is also drawn from them. These Preparations are strengthening, and good in malignant Fevers and the Small-Pox. Nitre dissolved, and chrystallized with the Juice of Raspberries, is very agreeable. *Martyn's Tournefort*.

The red Raspberry is more common than the white; such as are large, full of sweet and vinous Juice, and pleasant to the Taste and Smell, are the best.

They are of a moistening and cooling Nature, cordial, and fortify the Stomach; they sweeten the Breath, purify the Blood, and are reckoned to be antiscorbutic and antinephritic.

Their refreshing Taste and Smell proceed from their essential Salt, intermixed with some oily Parts a little refined, which lightly pricking the Nerves of the Taste and Smell, excite an agreeable Sensation in them. They have nearly the same Principles, and consequently the same Effects as Strawberries; but they are moister and more phlegmatic, and not so compact in their Parts; for which reason they easily corrupt in the Stomach, if they continue there too long. The Flowers are used against the St. *Anthony's Fire* and Inflammations of the Eyes.

Raspberries are proper in warm Weather, and suit young bilious People, and those whose Humours are too sharp, and over-much agitated. *Lemery on Foods*.

5. *Rubus*; odoratus. *Cornuti*, 158.

6. *Rubus*; flore albo, pleno. *H. R. Monsp.*

7. *Rubus*; Alpinus; humilis. J. B. 2. 61. Tourn. Inst. 615.

615. *Boerb. Ind. A. 2. 60. Chamærubus, Offic. Chamærubus Saxatilis, C. B. Pin. 479. Raii Hist. 1. 654. Synop. 3. 261. Rubus Saxatilis, Ger. 1090. Emac. 1273. Rubus Alpinus Saxatilis, Park. Theat. 1014. STONE-BRAMBLE.*

It grows on high Mountains, flowers in *June*, and the Berries have the same Virtues with Raspberries.

All these Species of the *Rubus* are received in Medicine; the Roots of the first, second, third and fourth Species, digged up in *February* or *March*, about the Full Moon, and boiled in Honey, are a very good aperient Medicine, whence it is proper for a Dropsy. The Fruit boiled in Red Wine, was accounted by the Ancients a sovereign Remedy, where the Case required Strengthening, and for the Hemorrhages, and Fluxes of the Belly. The ripe Berries are full of a nitrous and aromatic Juice, which is highly aperitive, resolves dry and harden'd Coagulations, and expels them by Urine, and is on that account very serviceable in Diseases, which require laxative and lenient Remedies, and such as are endowed with a saponaceous Quality. The Leaves, which way soever prepared, are corroborative and astringent; the Fruit is laxative and aperient, and the expressed Juice of the Leaves is of Use in all acute Diseases. Hence the *Syrupus de Rubis*, or *de Rubo Idæo*, is very good in all Disorders proceeding from Bile, and Inflammations. A few Berries of the fourth and fifth Species, put into Wine, communicate to it a fine Colour and Fragrancy, and greatly exhilarate the Heart. They call this Wine *Ruboides*. Of the same they prepare a Jelly, which is commended for hot Distempers. The Leaves and Fruit are commended in a Diarrhæa, Fluor Albus, Vomiting, and immoderate Fluxes of the Uterus and Nostrils; they cure Ulcers of the Gums, and are an excellent Remedy for the Aphthæ and Ulcerations of the Mouth. The bruised Leaves extirpate Warts, cure Wounds and Ulcers, and remove the Itch. *Hist. Plant. ascript. Boerhaave.*

RUCMA, or LUCMA. *De Lact.* An American Fruit, somewhat like an Orange with respect to Size and Shape. It is not esteemed a good Food, nor is it used in Medicine.

RUCTUS, or RUCTATIO. An Eructation, or discharging of Wind upwards.

RUELLIA.

The Characters are;

It hath a funnel-shaped Flower, consisting of one Leaf, which is cut into several Parts at the Brim, from whose Empalement arises the Pointal, which is fixed like a Nail in the Bottom of the Flower, and afterwards becomes a membranaceous Pod, which opens into several Parts, and is filled with small Seeds.

Miller mentions three Species, which are;

1. *Ruellia; Americana; humilis; Asphodeli Radice.* Plum. Nov. Gen.

2. *Ruellia; Carolinana; foliis oblongis angustis, flore purpureo.* Houft.

3. *Ruellia; Americana; humilis, parvo flore cæruleo, capsulis teretibus.* Houft.

The first Sort was discovered by Father Plumier in America, who gave this Name to the Genus in Honour of Dr. Ruellius, a Person learned in Natural History, who flourished in the sixteenth Century. The second Sort grows plentifully in South-Carolina, from whence it was brought into the English Gardens. This Sort grows much taller than the other two. The third Sort was discovered by the late Dr. William Houston in Jamaica, who sent the Seeds into England. The Flowers of this Kind are much smaller than those of the other Sorts, and are of short Duration, seldom continuing above one Day. *Miller's Dictionary.*

RUFUS EPHESIUS, or RUFFUS EPHESIUS. This ancient Physician lived under the Emperor Trajan, and was esteemed by Galen one of the most skilful of his Profession. The same Author tells us, that Rufus wrote of the *Materia Medica* in Verse; he also wrote a Treatise of the *Atra Bilis*, and some others cited by Suidas, but now lost; and we have nothing left of his Works, but a small Treatise of the Greek Names of the different Parts of the Body, and another of the Diseases of the Kidneys and Bladder, with a Fragment of a Treatise of Cathartic Medicines. His principal Scope in the first of these Works, was to give a general Idea of Anatomy, and in particular to prevent the Mistakes of his Contemporaries, who studied Medicine in reading ancient Authors, some of whom had distinguished certain Parts of the Body by Names different from those given them by others. Besides this, we may infer from what Rufus says in this Book, that Anatomic Operations, in his Time, were only exercised upon Beasts. "Chuse, says he, an Animal the most like Man that can be, you will not find all the Parts in every Respect resembling those of the Human Body; but they will, however, have at least some Relation one to another. Formerly, he adds, Anatomical Demonstrations were made upon human Bo-

"dies." We learn also from the same Book, that the Nerves, which were afterwards called *recurrent*, were then newly discovered. "The Ancients, says Rufus, called the Arteries of the Neck *Carotides*, or *Carotics*; as much as to say, *soporific*, because they believed, that by a strong Compression of these Arteries the Animal was laid asleep; and lost his Voice; but it has been discovered in the present Age that such an Accident proceeds not from a Compression of those Arteries, but from that of the Nerves contiguous to them." This Physician seems also to have seen certain Vessels of the Matrix, of which Anatomists before him had made no mention. "Herophilus, says he, believed that Women had nothing of varicose Parastatæ, but we have found, by examining the Matrix of a Brute, certain Vessels which arise from the Testicles, and being reflexed on both Sides in the Form of Varices, proceed to terminate in the Cavity of the Matrix. They also yield a glutinous Humour when pressed, and it is undoubtedly believed that they are seminal Vessels of that Kind which they call *varicose*." Rufus had before observed, that there are four spermatic Vessels in Man, two varicose, and two glandulous; and that the Extremity of the first, which joins to the Testicles, went by the Name of *Parastata*. The little Treatise of the Diseases of the Kidneys and Bladder contains nothing particular. Rufus also wrote some Commentaries upon Hippocrates.

The Three Books of *Rufus Ephesus*, of the Names of the Parts of the Human Body, were published in Greek by Jac. Goupylus, at Paris, 1554, in Octavo, *Typis Regiis, ex Officina A. Turnebi*. They had been translated, together with *Aretæus*, into Latin, by Junius Paulus Crassus, and printed at Venice, 1552, in Quarto, and were revised by the same Goupylus, and reprinted at Paris, 1554, in a smaller Size; and again, among the *Medici Principes* of Hen. Stephanus, 1567, in Folio. They were also revised a second time by Crassus, and reprinted at Venice, 1555, and at Basil, 1581, in Quarto.

His Book of the *Diseases of the Kidneys and Bladder*, with his Fragment of *Cathartic Medicines*, were published in Greek with the other three Books of Rufus abovementioned, and *Soranus de Utero & Muliebri Pudendo*, by the same Goupylus, at Paris, *ex Officina Turnebi*, 1554, in Octavo, and printed the same Year in Latin in a lesser Size; and were afterwards reprinted in Latin among the *Medicæ Artis Principes* of Hen. Stephanus, 1567, Folio.

A new Edition of Rufus in Greek and Latin, revised and compared with the Bern Manuscript, was designed by Martinus Bogdanus, as we are told by Bartholinus, *Cent. 4. Medic. Epist.*

Labbeus, *Bibl. nov. Manuscript.* mentions *Rufus de Veneris, & de Offibus*; and Rhasis ascribes to Rufus the Books *περί υγιάς*, "Of Health," which are found among the Writings of Galen.

Works of Rufus which are lost, are five Books, *περί διαίτης*, "Of Diet," mentioned by Suidas, and the second of them quoted by Oribasius. Four Books, *περί βλάστης*, "Of Herbs," in Hexameter Verses, mentioned by Galen, *Præf. Lib. 6. de Simp. Med.* who seems also to quote some of them. Galen in the Place just mentioned, quotes also the *διγνωστικὰ βιβλία*, "Books of Therapeutics;" whence most of the Fragments of Rufus, which we find in *Ætius*, seem to be taken. Galen also commends a Treatise of Rufus concerning Melancholy, or *Atra Bilis*.

Besides these Works of Rufus mentioned by Galen, Suida takes notice of his Treatise of the *Diet of Corpulent Persons*, of another on *Vulnery Medicine*; and a Treatise of *Picant Tumors or Excrefcences*; another of *Ancient Medicine*; and a Treatise of *Milk, Wine, and Honey*. There was another Rufus, called *Menius Rufus*, mentioned by Galen, *Lib. 7. de C. M. P. G. Fabricii Biblioth. T. G. p. 102.*

RUGA. A Wrinkle. The following Prescription is an approved Cosmetic in Wrinkles of the Face. Boil Hartshorn, not old, in Water, till it yield a Sort of Juice. Then strain the Water, and with the same knead Bean-Meal, which afterwards reduce into Troches, and dry them in the Shade. When Occasion requires, dissolve a sufficient Quantity of these Troches in Water, till it becomes of the Thickness of a liquid Cerate, with which anoint the Face, and when it is agglutinated, wash it off with warm Water. *Ætius, Tetrab. 2. Serm. 4. Cap. 4.*

RUGITUS. A Murmuring of the Intestine; the same as BORBORYGMOS.

RUMA. The Gula, or the external Part of the Throat.

RUMEX. The same as ACETOSA.

RUMINANTIA ANIMALIA. Ruminating Animals, that is, those who chew the Cud.

RUMPHAL. A Species of *Indian Arum*, called also IO-NOME. The Juice is poisonous; but the Roots are recommended as an excellent Application to the recent Bites of Ser-

[* N]

pents;

pents; but if the Wounds are not fresh, cut them open, and then apply the Roots. It is, farther, esteemed an excellent Topic for Parts affected with the Venereal Disease.

RUPICAPRA. See CAPRA ALPINA.

RUPTORIUM. A Caustic used in Surgery for breaking or opening Abscesses.

RUSCUS.

The Characters are;

The Calyx is monophyllous, and multified, from the Middle of which proceed monopetalous, campaniform, and globous Flowers; the Ovary becomes a globous soft Fruit, filled with one or two Seeds, which are generally hard.

Boerhaave mentions four Sorts of *Ruscus*, which are;

1. *Ruscus*; angustifolius, fructu folio innascente. See BISLINGUA.

2. *Ruscus*; latifolius; fructu folio insidente. *Tourn. Inst.* 79. *Boerb. Ind. A.* 2. 63. *C. B. P.* 305. *Laurus Alexandrina*, Offic. J. B. 1. 574. *Raii Hist.* 1. 663. *Alexandrina genuina*, Park. Theat. 700. *Hippoglossum Matthioli*, Ger. 761. Emac. 909. LAUREL OF ALEXANDRIA.

The Root of this Bay is hard and knotty at the Head, sending out several long Strings and small Fibres; the Stalks are tough and limber, growing not to any great Height, having the Leaves set alternately upon them, which are hard, firm, and full of straight Nerves, of an oval Shape, but sharp-pointed at the End, about two Inches long; on the Middle of the Back-Part of each grows a small mossy green Flower, which is succeeded by a red Berry about as big as a Juniper-Berry. This Plant grows in the mountainous Parts of *Italy* and *Hungary*.

It is commended by *Dioscorides* and *Galen* to open Obstructions of the Kidneys and the Womb; to provoke Urine and the Menfes, and as helpful in long and hard Labour. It is also accounted a good vulnerary Plant, and useful to dry up old Ulcers and Sores; but is rarely used in our Days. *Miller's Bot. Off.*

3. *Ruscus*; angustifolius; fructu summis ramulis innascente. *T.* 79. *Laurus Alexandrina*, fructu longis pediculis caulibus aligato. *M. H. Boef.*

4. *Ruscus*; myrtifolius; aculeatus. See BRUSCUS. *Boerb. Ind. Alt. Plant. Vol. 2.*

RUSMA. A Preparation of Honey which the *Turks* and *Tartars* use by way of *Dropax* or *Psilothrum*. It is made by boiling Honey to the Consistence of a Rob or Sapa.

RUSTICULA. The same as GALLINAGO. The Woodcock.

UTA.

The Characters are;

The Leaves are divided into Segments; the Calyx is monophyllous, quadrifid, quinquefid, and stellated; the Flowers are relaccous, tetrapetalous, and pentapetalous, furnished with eight or ten Stamina, four or five of which arise from the Unguis of the Petals, and four or five from the Interstices of the Petals; the Ovary seated in the Bottom of the Calyx, becomes a roundish, quadrangular, or pentangular Fruit, consisting of as many Capsules, in which are contained kidney-shap'd or angular Seeds.

Boerhaave mentions ten Species of *Ruta*, which are;

1. *Ruta*; major; hortensis; latifolia. *Boerb. Ind. A.* 260. *Ruta*, Offic. *Ruta hortensis*, Ger. 1070. Emac. 1255. *Ruta hortensis major*, Park. Theat. 132. *Ruta hortensis latifolia*, C. B. P. 336. *Tourn. Inst.* 257. *Ruta sativa, vel hortensis*, J. B. 3. 197. *Raii Hist.* 1. 874. GARDEN-RUE.

Rue is a shrubby Plant, whose elder Branches are tough and woody, having smooth blueish green Leaves, divided into an uncertain Number of small oval Sections, which are somewhat thick and fat, and round-pointed at the End, abiding all Winter. The Flowers grow on the Top of the younger Shoots, consisting usually of four yellow, hollow, scoop-like Leaves, torn in about the Edges, and having eight yellow Stamina, encompassing a roundish green Head, cut as it were into four Parts, growing large, and seemingly punched full of Holes, containing small black rough Seed. The Root is woody, having many Fibres. Rue is planted in Gardens; the Leaves and Seeds are used; the whole Plant has a very strong Scent.

Rue is a Plant of many Virtues, being alexipharmic, and good against infectious pestilential Diseases, and the Plague itself, and all Kinds of Fevers. It helps Disorders of the Head, Nerves, and Womb, Convulsions and hysteric Fits, the Colic and Weakness of the Stomach and Bowels; it resists Poison, and cures the Bites of venomous Creatures, and mad Dogs. It is an Ingredient in the Compound-Water of Briony, and in Treacle-Water.

Official Preparations are a simple Water, and a Conserve of the Leaves, and an Oil by Decoction. *Miller's Bot. Off.*

That Rue was greatly esteemed by the Ancients, is sufficiently certain; since it was the principal Basis of the Antidote of King *Mithridates*. Rue abounds with a highly acrid and penetrating Oil, capable of stimulating the languid Fibres to a brisker Motion, and consequently imparting an additional Strength to them. The Leaves of Rue mixed with recent Butter, and eaten in the Morning with Rye-Bread, are beneficial to those who abound in Phlegm, and an excellent Preservative against the noxious Influences of a moist and vapid Atmosphere, and the contagious Miasmata of epidemical Disorders. The Leaves bruised with Pepper, common Salt, and strong Vinegar, and applied to the Arteries of the Carpus, provided the morbid Matter is before duly managed, excellently check the febrile Impetus, and are often used with more Efficacy and less Danger, in stopping obstinate Quartan Fevers, than internal Astringents, and the so much celebrated *Peruvian Bark*. Strong Wine-Vinegar, richly impregnated with the Juice of Rue, when applied to the Mouth and Nostrils, is not only an excellent Preservative against the Contagion of epidemical Disorders, but also more effectual in preventing Deliquiums, than all the cephalic, rich, balsamic and apoplectic Spirits. *Hoffman. de Præstant. Remed. Domest.*

Rue is an Herb very much commended as an Alexipharmic, and is esteemed one of the best Simples for Hysteries, Epilepsy, Apoplexy, Convulsions, Pestilence, Inflammations and Gangrenes; in which last Case, the Herb bruised and applied with Wine and Salt, quickens the dead Part, prevents a Suppuration, and effects a Cure. *Nicander* commends it against the Bites of all venomous Creatures. There is no better Herb in the Pestilence; it has something of an aromatic, acidish, fragrant and oily Quality, and is heating in a high Degree, with a kind of Acidity. The Smell revives Women under a Syncope, and raises them under hysteric or epileptic Fits. It is of mighty Efficacy against Phlegm, and is very good, externally applied, for cold and pituitous Tumors; and it is highly celebrated for clearing and sharpening the Sight. It has a very acrid but not burning Taste, and abounds with a Salt, Oil, and a very penetrating Spirit, and is on that Account of singular Service in moving and stimulating the Nerves, and in attenuating gross Humors, and expelling them by insensible Perspiration and Sweat. It is an excellent Plant, as *Pliny* assures us, against all Sorts of Poison, and for all hysteric Melancholy, and hypochondriac Disorders, and for Faintings. It provokes the Menfes, and expels the Lochia, Fætus, and Secundines; and drank in the Morning instead of Tea, and the Vapour received into the Eye, sharpens the Sight. The Seed is much commended for the Worms, and the Gonorrhæa, and consumes the Semen by its excessive Heat and Dryness. The Herb is of Service in the Small-Pox and Measles, the Epilepsy, lethargic Disorders, and the flatulent Colic. Rue externally used is good for cold, humid and watry Tumors. A Cataplasm is prepared of Rue bruised and boiled with Wine, which resists an Inflammation. Rue may be given inwardly in the most acute Diseases. *Hist. Plant. ascript. Boerhaave.*

2. *Ruta*; hortensis; latifolia; arbusculæ similis, C. B. P.

3. *Ruta*; Africana; maxima, *Catal. Schœverin.*

4. *Ruta*; Chalepensis; tenuifolia; florum petalis villis sca- tentibus, *M. H.* 2. 508.

5. *Ruta*; Chalepensis; latifolia.

6. *Ruta*; hortensis; minor; tenuifolia, *M. H.* 2. 507.

7. *Ruta*; hortensis; minor; tenuifolia; foliis variegatis argenteis.

8. *Ruta*; sylvestris; minor, C. B. P. 336. *J. B.* 3. 200. *Peganium Narbonensum*, L. ob.

9. *Ruta*; sylvestris; major, *J. B.* 3. 200. C. B. P. 336. *Park. Theat.* 133. *Raii Hist.* 1. 874. *Tourn. Inst.* 257. *Boerb. Ind. A.* 260. *Ruta Montana*, Offic. Ger. 1071. Emac. 1255. WILD RUE.

It grows on Mountains, and flowers in *July*, and is supposed to have the same Virtues as the Garden-Rue, but is more acrimonious.

10. *Ruta*; sylvestris; linifolia; Hispanica, *Bocc. Mus. Part. 2.* 82. *Tab.* 73. *Boerb. Ind. Alt. Plant. Vol. 1.*

UTA is also a Name for the HARMALA; which see.

UTA CANINA. A Name for the *Scrophularia*; *Ruta Canina dicta vulgaris.*

UTA CAPRARIA. Goats Rue. See GALEGA.

UTA HYPERICOIDES. A Name for the *Hypericum*; *fatidum*; *frutescens.*

UTA MURARIA. See ADIANTHUM ALBUM.

UTA PRATENSIS. A Name for the *Thalicttrum*; *pratense*; *angustifolium.*

UTACEUM. Vinegar of Rue. See ACETUM.

UTETA. The same as TARANTULA; which see.

RUTICILLA. A Bird called the Red-Tail, or Red-Start. The same as **PHOENICURUS**.

RUTILUS. Offic. Schönf. Ichth. 63. *Rutilus, five Rubellus fluviatilis*, Gesn. de Aquat. 821. *Rutilus fluviatilis*, Jonf. de Pisc. 99. *Rutilus, five Rubellus fluviatilis Gesneri*, Aldrov. de Pisc. 732. 621. Raii Ichth. 262. Ejusd. Synop. Pisc. 122. *Rutilus, five Rubellus*, Mex. Pin. 190. **THE ROCHE.**

The Flesh of this Fish, which is very common in Rivers, is said to promote Venereal Inclinations.

RUYSCH. A celebrated Anatomist of Holland. See a farther Account of him under the Article **ANATOME**.

RUYSCHIANA.

The Characters are ;

The Root is perennial, and the Leaves are not so thick as those of Rosemary ; the Galea is hollow, bifid and trifid, the Beard trifid, the middle Segment hanging forward, bifid, and spirally convolved. The Flowers are beautiful, generally set at first by Sixes in thin Whorles, but afterwards collected into a Spike.

Boerhaave mentions but one Sort of this Plant, which is, *Ruyschiana* ; flore caeruleo, magno. *Hyssopus Austriaca*, magno flore, folio *Chamaepitidis*. H. L. *Chamaepitys, caerulea, Austriaca*, C. B. P. 250. *Prunella, Hyssopi folio viridi, amplo flore caeruleo*, M. H. 3. 364. *Boerb. Ind. Alt. Plant. Vol. 1.*

S.

S. For the Signification of this Letter in the Chymical Alphabet, see **ALPHABETUM CHYMICUM**.

S. f. or fs. immediately following any Character importing Quantity, signifies *Semis*, Half.

SAAMOUNA. A Name for the **PAVIA**.

SABDARIFFA. A Name in *Boerhaave* for the *Ketmia* ; *Indica* ; *vitis folio* ; *ampliore*.

SABINA.

The Characters are ;

The Leaves resemble those of the Cypress, but are more compact ; the Berries are verrucose ; it has a very strong and singular Smell.

Boerhaave mentions two Sorts of *Sabina*, which are ;

1. *Sabina* ; folio Tamarisci ; Dioscoridis. C. B. P. 487. *Boerb. Ind. A. 2. 207. Sabina*, Offic. Park. Parad. 607. *Sabina vulgaris*, Theat. 1027. Raii Hist. 2. 1415. *Sabina sterilis*, Ger. 1193. Emac. 1376. J. B. 288. **SAVINE.**

Savine is an ever-green shrubby Tree, that seldom grows very tall, having the Branches set close together, clothed with narrow, short, somewhat prickly Leaves, pretty much resembling Cypress, of a very strong Smell ; among these, after the Tree is old, and has stood long in a Place, grow small mossy greenish Flowers, which are succeeded by small flattish Berries, less than those of Juniper, of the same blackish, blue Colour. It is planted in Gardens, where it seldom produces Fruit, and has therefore generally been reputed barren.

Savine is hot and dry, opening and attenuating, and a powerful Provoker of the Catamenia, causing Abortion, and expelling the Birth. It is very good to destroy Worms in Children. Mr. Ray recommends the Juice of it, mixed with Milk, and sweetened with Sugar, as an excellent Medicine for that Purpose ; beaten into a Cataplasm, with Hog's Lard, it cures Children's scabby Heads.

Officinal Preparations are, the *Oleum Sabinæ per infusionem decoctionem*, and the *Oleum Sabinæ chymicum*. *Miller's Bot. Off.*

Boerhaave, in his Chymistry, asserts, that a Water prepared from Savine, by repeated Cohobations, is a most excellent Ecbotic, Emmenagogue, and Promoter of the Hæmorrhoides ; that it is heating, and a most excellent Medicine, if used discreetly. He farther informs us, that the chymical Oil of Savine is a most powerful Promoter of the Menfes, when their Retention proceeds from a Languor and Debility only.

A Cataplasm, made of the Seeds of Savine, bruis'd with Sal Gem and Oil, is said to be good for an Anchylosis ; and a Cataplasm of the same Leaves, mixed with Honey, is frequently applied to the umbilical Region, in order to destroy Worms in the Belly.

2. *Sabina* ; folio Cypressi. C. B. P. 487. *Boerb. Ind. A. 2. 207. Sabina* Offic. *Sabina baccifera*, J. B. 1. 288. Ger. 1193. Emac. 1376. *Sabina baccifera major*, Park. Theat. 1026. *Cedrus baccifera fructu minore caeruleo*, Raii Hist. 2. 1415. *Juniperus Alpina Sabinam referent*, Pluk. Almag. 201. **BERRIED SAVINE.**

This Plant is cultivated in Gardens, and is said to be attenuating, and inciding ; powerfully to provoke the Menfes, to promote the Expulsion of the Secundines, and to destroy Worms in the Intestines.

SABON, or SABENA. Soap, or a Lixivium from whence Soap is made.

SACCELLUM. The same as **SACCULUS**.

SACCHAR, or SACCHARUM. *σάκχαρ*, or *σάκχαρον*. Sugar.

With respect to the Sugar, or *σάκχαρον*, *Saccharum*, of the Antients, which is said to be the same with *μέλι καλάμνου*, "Honey of Reeds," of *Theophrastus*, and which others called *Ἰνδικὴ ἰσχυρία*, "Indian Salt," *Salmasius* says, that it was gathered from some Reeds or Canes, as tall and big as Trees, and that it is the same as they now call *Sacar Mambu*. The *Arabians* gave it the Name of *Tabaxir*, which is still in Use in *Turkey* and *Persia*, to signify that Kind of Sugar. But as neither the *Arabians*, any more than the *Greeks*, had ever seen in their own Country the Reed which produced it, and spoke of it only by Hearsay, they entertain us with nothing but mere Fables on that Subject. *Avicenna* tells us, that it is supposed that the Canes of the *Tabaxir* being agitated by the Wind, shock and bruise one another in such a Manner as to take Fire, and kindle into a Flame, and that the Ashes which are collected after this Combustion, at the Bottom of the Canes, is the *Tabaxir*. He confesses indeed, that this is a vulgar Story, to which he gives no Credit ; but he believes, however, that the *Tabaxir* is the Ashes of *Indian Reeds*, or of their Roots, which are burnt on Purpose ; and *Averroes* says, that it is the Charcoal made of the Joints of the same Reeds.

Salmasius observes, that this Error of the *Arabians*, in supposing their *Tabaxir* was a Kind of Ashes, because it was in the Form of a greyish Powder, gave Occasion to the modern *Greeks*, who translated those *Arabians*, to render the Word *Tabaxir* by *Spodium*, which comes from *σποδός*, *Spodos*, Ashes. And this has been the Cause of great Confusion in Medicine ; for the antient *Greeks* gave the Name of *Spodium* to what we now call *Tutty*, [*Dale* says the *Spodium Græcorum* was Putty] but the modern *Greeks*, and all the Physicians and Apothecaries after them, have called burnt Ivory by that Name ; so that there are three very different Things, a Kind of Sugar, the Ashes or Soot of a Mineral, and the Ashes of Ivory, all under one Denomination.

To return to the *Spodium*, which is the *Tabaxir*, it is further to be observed, that the *Arabians* distinguished it from the Sugar of the Antients, tho' it was, as we said, the very same Thing, because they believed that their *Tabaxir* was a Kind of Ashes, whereas the Sugar of the Antients was described as a Dew which fell upon the Canes, or as a sweet and fat Juice which flowed from the Cane itself, when it was burnt. On the other hand, they believed that our Sugar was the same which they found in the Writings of the *Greeks* under the Name of *σάκχαρον*, *Saccharon*, and upon that Account they called it *Suchar*, or *Zuchar*, tho' there be really a good deal of Difference between those two Sugars. The first, or that of the Antients, besides, that it proceeded from a very large Reed, as we before observed, flow'd from it naturally and spontaneously, like a Kind of Manna, whereas our Sugar is the Juice of a much smaller Cane, which must be ground and pressed in order to extract its Juice ; and this Juice must afterwards be boiled and purified, to acquire the Consistence it has.

Salmasius shews, that the Sugar which we now use was absolutely unknown to the Antients. *Seneca*, says he, tells us, "It is reported that Honey is found among the *Indians* in the Leaves of Reeds, which is generated either by the Dew of that Climate, or the sweet and fat Humour of the Reed itself." You see by this how little known and used the *Tabaxir* was by the Antients, since *Seneca* speaks of it only by Hearsay. The *Arabian* Authors who reckon several Kinds of Sugar, omit this which was the only kind known to the Antients by that Name ; and the Reason was, as we hinted before, they did not take it for a Sugar, but a *Spodium*. Thus

Salmasius,

Salmafus, who believes, however, that the Antients, tho' utterly unacquainted with our modern factitious Sugar, might have heard speak of the Cane which produces it, and of its Juice; but that the *Indians* themselves of those Times knew not how to make the Sugar, and only used the expressed Liquor of the Cane, which is sweet, for a Drink. As a Proof that the Antients had some Knowledge of the Sugar-Cane, he quotes those Verses of *Varro Atacinus*:

*Indica non magna nimis Arbore crescit Arundo,
Illius è lentis premitur radicibus humor,
Dulcia cui nequeant succo contendere Mella.*

"In *India* there grows a Cane of a moderate Bigness, from whose viscid Roots is expressed a Liquor with which Honey itself cannot be compared for Sweetness." *Salmafus* however intends not to prove that the Invention of Sugar, or the Way of preparing it as we now have it, is very new; but acknowledges that it was discovered above eight hundred Years ago, and that it was grown very common in the Time of *Avicenna*.

The Cane which produces the common Sugar is thus distinguished.

Arundo Saccharina, J. B. 2. 531, Ger. 35. Emac. 38. Raii Hist. 2. 1278. *Arundo Saccharifera*, C. B. Pin. 18. Theat. 193. Boerh. Ind. A. 2. 162. *Harundo Saccharifera*, Park. Theat. 1210. *Canna Saccharifera*, Ogilb. Chin. 1. 228. *Arundo Viba Brasiliensis* dicta, Pis. (1648.) *Tacumaræ sive Arundo Saccharifera*, Ejusd. (1658.) *Pubæ & Tacumaræ Brasiliensis*, Marcg. 82. THE SUGAR CANE.

This Species of Cane is produced in large Quantities in the *East* and *West Indies*, and the Islands most contiguous and adjacent to them. Its Stalk and Leaves resemble those of the common Cane, only its Stalk or Trunk is not so high as that of the other, since it is only six or seven Feet in Length. The Stalk of this Species is of a Colour like that formed by a Mixture of yellow and green. 'Tis more than an Inch in Circumference, furnished with Knots or Joints, and full of a spongy, white and sweet Pith. Its Root is not unlike that of the common Cane, but is not so woody, tho' it abounds with a sweet Juice. *Lobelius* in *Adversar.* informs us, that its Root dried and reduced to a Powder, is a Meal used by many of the *Indians* for making a Species of Bread of a very agreeable Taste. The best Cane is produced in the *Canary* and *Madera* Islands. That growing at *Java* and *Madagascar* is also excellent. This Species of Cane yields the Sugar by *Latin* Writers called *Saccharum*, *Zuccharum*, *Zuccorum* and *Sucharum*. The *Arabians* call it *Zuchar*, *Zucara*, *Succhar*, *Zozar*, and *Sutter*, and the *Greeks*, *Σακχαρον*, *Σακχαρ*, *Σάκχαρι*, and *Σάκχαριον*. Many call it *Mel Arundinaceum*, after it is boiled, evaporated, and put in wooden Vessels for Exportation.

There are in the Shops various Species of Sugar, which receive their Appellations either from the Parts in which they are produced, or from their Goodness and Fineness. Thus we have *Canary Sugar*, *Valentian Sugar*, *Malta Sugar*, *Powder Sugar*, *Refined*, and *Double Refined Sugars*, *Thomasian Sugar*, from an Island of the *Indies* bearing the Name of *St. Thomas*, *Sugar Candy* and *Penidian Sugar*, and *Coarse Red Sugar*, most generally used in Clysters, on Account of its abstergent and resolvent Quality. *Barley Sugar* is also a factitious Sugar, and is accounted good for the Breast and Throat. The best of it is white, spongy, large, and easily broken. For Coughs in Children it is exhibited with Oil of sweet Almonds, or Syrup of Violets. The Diapenidion of the Shops cures Disorders of the Breast, alleviates Coughs, is good against pleuritic Pains, a Difficulty of Breathing, Consumptions, Disorders of the Lungs, and Spittings of Blood. Liquid Sugar remains always in the Consistence of Honey or Syrup, and is no more than the Froth gathered in refining the other Sugars. As for the Nature and Qualities of Sugar in general, it is temperate, heating, emollient, resolvent, purgative, and calculated to resist Putrefaction. If it is properly used, it nourishes the Body; for according to *Claud. Dioscor.* *Anth. Hygiast.* L. 1. Cap. 21. nothing nourishes which is entirely free from Sweetness. It is good for the Stomach, Lungs and Breast, cures Coughs, and all Diseases of the Thorax, promotes Expectoration, softens internal Tumors, cleanses Ulcers of the Kidneys, Bladder, and Intestines, hinders all corrosive Substances from so easily corroding the internal Parts, makes agreeable Sweet-meats, and renders ungrateful Medicines agreeable. But the more white and pure Sugar is, the less sweet it, also, is, as we are informed by *Pis.* l. 4. de *Facultat. Simpl.* cap. 1. and *Erasm. Francis*; for if coarse brown Sugar is dissolved in a Lixivium of Lime Water, refined and separated from its grosser and more impure Parts, it assumes an acid Taste, different from what it had

before, and overheats the Blood; for which Reason, Persons of hot and bilious Constitutions ought to be very cautious in using it, except in Medicines, since it will soon be converted into Bile: For according to *Ettmuller*, by its volatile Acidity it disturbs the Bile, and excites a preternatural Orgasm in it. And according to *Henricus ab Heer, Obs. Med.* 5. it is principally injurious to scorbutic, hypochondriac, cachectic, and feverish Patients, if they use a considerable Quantity of it; because, being easily converted into Bile, it augments the Fever and all its Symptoms. It is also injurious to Women who labour under a Suffocation and Strangulation of the Uterus, relaxes the Mouth of the Stomach, and, according to *Ettmuller*, on account of its easily fermentable Quality, soon becomes acedent in the Stomach, and *Primæ Viæ*. It weakens Digestion, and produces Flatulences, and sudden Heats, impairs the Appetite, generates a corrosive Blood, produces Pains of the Belly and Dysenteries. According to *Joh. Chr. Fromman. Tr. de Hæmorrhoid. Part. 1. Probl. 33.* it lays a Foundation for the Hemorrhoids. This Opinion is also confirmed by *Melch. Sebiz. L. 2. de Facult. Aliment.* and *Val. Henr. Volger. Diætet. Comment. cap. 9.* *Simon Pauli in Quadriport. Botan.* informs us, that in *England* an excessive Use of Sugar produces Consumptions; and *Ehrenfr. Hagenborn, in Hist. Med. Phys. 23. Cent. 3.* tells us, that Sugar produces an irregular Gout. Not only Women, but, also, several Physicians are of Opinion, that Sugar and Honey generate Worms in Children; but if we reflect on the Generation of these Animals, we shall easily perceive that it is hindered by nothing more than by Sugar and Honey. In *Act. Med. Leips. An. 1700.* Sugar copiously used is recommended against Worms. This Piece of Practice is also authorized by *Levinus Lemnius, L. 1. de occult. Nat. Mir. Cap. 21.* *J. Heurn. de Peste, Cap. 21.* *J. Varand. de Morb. Intestinar. Cap. 2.* *Laur. Strauff. Palæstr. Med. L. 3.* And *A. Vincent de Petrone*, in his *Consilium de Vermiculis quibusdam in Corvorum & Aprorum Hepate inventis*; for 'tis certain that Worms are generated either by a coarse, crude, and verminous Matter, subject to Putrefaction, or by the Eggs of Insects taken in with the Aliments. But Sugar and Honey never putrefy, as we are told by *Galen, in Lib. 3. de Simpl. Med. Facultat. cap. 15.* On the contrary, Sugar and Honey, by means of their balsamic Quality, which resists Putrefaction, are very proper for preserving Substances for a long Time. For this Reason in the Shops, Conserves, Syrups, Electuaries, Linctuses, and Confections, cannot be made without Sugar: Neither can Roots, and various other Things be preserved without it; for it not only assumes the Smell, Taste, and Colour of all the Ingredients, but also preserves their Virtues and Qualities for many Years. For this Reason also the Antients embalmed their Dead with Honey. Confirmations of this may be found in various practical Authors. *Ant. Mizald. in Cent. 5. Aph. 27.* informs us, that not only Butter, but also sweet Substances and Raisins kill Worms. And *Sanctor. in Lib. 5. Meth. Vitand. Error. Cap. 11.* tells us, that Honey and Sugar are possessed of a certain intense Acrimony and Heat, by which they are greatly defended against Putrefaction. Externally Sugar cures recent Wounds, purifies Ulcers, removes white Spots and Films from the Eyes, according to *Marc. Gatinar. in Prax. Med. cap. 21.* The *Turks*, in order to cure their Wounds, wash them twice a Day in Wine, and afterwards put Sugar in them. *Joh. Haricæus*, in his *Thesaurus aureus, Part. 2.* informs us, that Sugar sprinkled on the Crown of the Head, removes Head-achs. In *Riedlin. Lin. Med. An. 2.* we are told that Sugar, mixed with Oil of Marjorum or Cloves, and taken up the Nostrils, removes a Coryza. According to *Joh. Beguinus in Tyrocin. Chym. L. 2. cap. 6.* Oil of Sugar relieves Pains of the Breast, Coughs, Asthma's and Hoarseness, in some Measure stops Catarrhs, and promotes Digestion. The same Author also informs us, that Tincture of Sugar, exhibited in Cinnamon or Rose Water, is excellent in Syncope and Deliquiums.

Sugar is the essential Salt of the *Arundo Saccharifera*, or Sugar-Cane, the different Kinds of which are these:

Muscovado, the first Sugar got from the Juice of the Canes. *Cassonada*, Sugar refined from the former by the Whites of Eggs, Lime-Water, &c. which being more oily than the more refined Sorts, is to be preferred for all inward Uses. It is also most proper for Confectioners, because it does not candy so easily.

Loaf-Sugar; *Cassonada*, still further refined, and clarified in different Degrees. It has the same Qualities with the former, but in a less Degree for inward Use. They both cut Phlegm, promote Expectoration, and animate the Blood; but they excite Vapours and the Tooth-ach. They who use much Sugar, are liable to Fevers and to rotten Teeth. In *Brasil*, the Skimmings of Sugar are given to the Hogs, by which they are soon fattened, and their Flesh becomes very delicate.

Sugar-

Sugar Candy, or Crystals of Sugar is of three Kinds, white, yellow, and red; which are only the three former Sorts boiled to a due Consistence. White Sugar Candy comes from the *Loaf Sugar*; yellow from the *Cassinado*, and red from the *Muscovado*. Sugar Candy is most proper in Colds, because it melts slowly, and thereby gives Time to the Saliva to mix with it, and thus to blunt the Acrimony of the Phlegm.

Red Sugar. This was used very much formerly in Loosenesses; but at present Oil of Sweet Almonds, and other Things of that Kind are substituted for it.

Syrup of Sugar, or *Molasses*, is the glutinous Part which drains from Sugar, and was formerly used for the red Preserves or Sweet Meats; but it gave them a disagreeable burnt Taste. In the *West Indies* they ferment and distil it; but the Brandy or Spirit which it yields is unpleasant and very intoxicating. A much better Spirit might be made of refined Sugar.

To these we may add the *Saccharum Acernum*, Maple Sugar; which is the Product of *Canada* and *New England*, in which Countries the Natives collect the Juice that runs from a kind of Maple Tree by Incision, and then evaporate that Juice to the Consistence of Sugar, which, while it remains unctuous, is better for internal Use than any other Kind; and the famous Syrup of Maiden-Hair of *Canada* is made with it. As it is brought to us, it is of a greyish Colour, and tastes like other Sugar. With this Sugar the Inhabitants of these Countries prepare also a Sort of Liquor, which is their common Drink; and also make Brandy and Vinegar from it. *Geoffrey*.

As Sugar is a temperate Salt, friendly to Nature, and capable of producing an intimate Union of oleous and pinguious Parts with Water, hence appears the Reason why some both among the Ancients and Moderns, used to mix Honey, Sugar, Figs, and dried Grapes, with the Food intended to fatten old Animals; for the pinguious Parts of the Aliments, which, when intimately incorporated with the aqueous Parts, constitute the Milk and Chyle, are by this Means more quickly dissolved, united with the aqueous Parts, and form a large Quantity of Chyle, which is conveyed with the Blood to all the Parts of the Body.

Hence also appears the Reason why either Honey or Sugar, mixed with Milk, prevents its Elaboration into Butter; for the Sugar more firmly unites with the Phlegm the numerous oleous Particles in the Cream; whereas, in order to the Churning of Butter, or its Collection into one Mass, these ought rather to be separated and disjoined from each other.

Hence we may also learn, that Sugar is not so unfriendly to the Mixture of the vital Fluids, as is commonly believed, since it neither induces any Change on the Blood, Milk or Serum, when mixed with them, but rather by stimulating the intestinal Fibres, facilitates the Excretion of the Fæces by Stool. And as it greatly promotes the Union of the oleous with the aqueous Parts of the Aliments, hence 'tis probable that it greatly contributes to the Generation of a large Quantity of Chyle. This accounts for the usual Method of fattening Capons and Geese, by mixing a little Honey, Sugar, or Salt with Wheaten or Barley-Meal for their Food. *Hoffman. Observat. Chym. L. 1. Obs. 7.*

I have had Reason to give a great Character of Sugar, on account of some extraordinary Effects it seemed to have on my Grandfather forty Years since. He made it his daily Practice to take or lick up as much Sugar as his Butter spread upon Bread would receive, for his constant Breakfast, unless he happened to exchange it for Honey sometimes. He frequently sweetened his Ale and Beer with Sugar: He had Sugar put to all the Sauces he used with his Meat: He had all his Teeth in his Mouth at eighty Years, strong and firm; never had any Pain or Soreness in his Gums or Teeth; never refused the hardest Crust. In his eighty second Year one of his Teeth drop'd out, and soon after that a second, which he put into my Hand, and was one of the Fore-teeth: He bid me feel the Cavity, where I struck my Nail upon a Bone. In short, all his Teeth came out in two or three Years, and young ones filled up their Room: He had a new Set quite round. His Hair, from a very candid white, became much darker. He continued in good Health and Strength without any Disease, and died in his 99th or 100th Year, of a Plethora, as I guess, for want of Bleeding. He was a *Bedfordshire* Gentleman of an old *English* Family, and the Case well known. This reconcil'd me much to vindicate Sugar, which I have formerly done before the Royal Society; and have shewn the unjust Calumny of the famous *Willis* against Sugar, who charges it with a corrosive Liquor, as bad as *Aqua Fortis*; he calls it *Aqua Stygia*. I examined it, and found the Charge unjust; that Sugar contained no worse Substance in it, than Milk and Honey, and Manna, nay even Bread itself. The Experiments were approved of, and are in your Journals. By *Dr. Sturt*, in the *Philosophical Transactions abridged*, Vol. 5. p. 311.

Mr. Sarrazin, a Physician of *Quebeck*, and Correspondent of the Royal Academy, found in *North America* four Species of Mapple-Trees, which he sent as a Present to the Royal Garden, after having given a Name to each. The fourth of these Species, which he calls *Acer Canadense Sacchariferum; fructu minori*, *D. Sarrazin*, is a Tree about sixty or eighty Feet high, whose Sap, which ascends from the first of *April* to the Middle of *May*, is pretty often richly impregnated with Sugar, as the Natives of that Country and the *French* have found. For obtaining this Sap they make an Incision in the Tree, from which it flows into a Vessel. This Juice, when evaporated, leaves about a twentieth Part of its primitive Weight, which is true Sugar, and proper to be used in making Confections, Syrups, and other Things, in which Sugar is generally employed. One of these Trees, which is three or four Feet in Circumference, will in one Spring yield sixty or eighty Pints of Juice, without losing any Thing of its Vigour. But if more was drawn from it, it is obvious that the Tree would be weakened, and a proportionable Decay brought on. This Juice, in order to be impregnated with Sugar, requires very singular Circumstances, which one would not easily conjecture, but which *Mr. Sarrazin* has carefully adverted to; for, first, at the Time the Juice is drawing, the Root of the Tree must be covered with Snow, which must be brought for that Purpose, if it is not there already: Secondly, this Snow must be melted by the Sun, and not by a warm Air: And, thirdly, it must have been a Frost the Night before. This Method used by Nature in forming the Sugar of the Mapple-Tree, resembles some delicate chymical Operations, where the Chymist does Things apparently opposite, and where those Things which appear the most similar do not produce the same Effects.

Another curious Remark of *Mr. Sarrazin's* is, that the Juice of this Species of Mapple-Tree, which is not good for making Sugar, will become so half an Hour, or an Hour at most, after the Snow with which the Root of the Tree is covered, begins to be melted. This Snow must therefore enter the small Filaments of the Mapple-Tree, and operate in them with great Expedition.

Mr. Sarrazin also informs us, that the *Apocynum Majus Syriacum rectum*, furnishes a Juice of which they make Sugar in *Canada*; for this Purpose they also gather the Dew found in the Bottom of its Flowers. *Hist. de l'Acad. Royal des Sciences, An. 1730.*

SACCHARUM HORDEATUM. *Barley Sugar.*

It is made from Sugar boiled over a slow Heat, in a Decoction of Barley, briskly beat up with the Whites of Eggs, and frequently scummed whilst upon the Fire. It is then to be strained through a Flannel, and again set upon the Fire, where it must boil slowly till it rises in large Bubbles, and upon Trial is found not to stick to the Teeth. It is to be poured upon a Marble-Stone rubbed over with Oil of sweet Almonds, as soon as the Bubbles subside, and its Extremities, as it runs out, turn back again, till it grows of the Consistence of a thick Turpentine, when it must be fastened to something, and nimbly drawn out by Hands rubbed over with Starch, into thin or thick, long or short Threads at Pleasure, and laid upon a Plate provided on Purpose, till it hardens into Lozenges.

SACCHARUM NITRATUM. *Sugar with Nitre.*

Take Crystal Mineral, one Dram, fine Loaf Sugar three Drams, mix together.

This is cooling and diuretic, and also serviceable in the scalding of Urine in a Gonorrhæa; but it is principally good to cool the Inflammation of the Uvula, and ease a sore Throat, by letting it melt gently in the Mouth.

SACCHARUM ROSATUM. See ROSA.

SACCHARUM SATURNI. See PLUMBUM.

SACCHARUM SCORBUTICUM. *An Antiscorbutic Sugar.*

Take any Quantity of the Juice of Scurvy-Grass, keep it in a Glass Bottle close stopped up till the Fæces are precipitated; then decant the clear, put a good Quantity of Sugar in a Marble Mortar, and work it well together, then gently dry it. Afterwards put more Juice to the same Sugar, dry it again, and repeat this Operation several Times, and keep it close stop'd for Use.

SACCHARUM TABULATUM SIMPLEX ET PERLATUM. *Simple and Pearl Lozenge Sugar.*

The first is made by pouring Sugar, which hath been sufficiently boiled with half its Quantity of Damask Rose-Water upon a Marble: And the latter by adding to every Pound of the former, towards the End of its boiling, half an Ounce of prepared and levigated Pearl, with eight or ten Leaves of Gold.

SACCHARUM TABULATUM COMPOSITUM.
Compound Lozenge Sugar.

Take of fine Rhubarb four Scruples, of the Troches of Agaric, of Coralline, burnt Hartshorn, of the Leaves of Cretan Dittany, of Worm-seed, of the Seeds of Purslain and Sorrel, of each one Scruple; of Cinamon, Zedoary, Cloves, and Saffron, of each half a Scruple; of the finest Sugar powdered one Pound. Let the Sugar be dissolved in five Ounces of simple Wormwood Water, and one Spoonful of strong Cinnamon Water; and the forementioned Species mixed with it, so as to make it into Tablets.

SACCITONIUM. Wine strained through a Bag. *Castellus* from *Codronchius*.

SACCULI ADIPOSI. The Cells of the Cellular Membrane filled with Fat.

SACCULI MEDICINALES. Medicinal Bags; that is, Bags filled with Medicinal Ingredients.

SACCULUS CHYLIFERUS. The Receptacle of the Chyle.

SACCULUS CORDIS. The *Pericardium*.

SACCUS. The *Intestinum Cæcum*.

SACCUS LACTEUS. The *Receptaculum Chyli*.

SACER. Sacred or holy. But it is used in a very different Signification, that is, to express *dreadful, horrid, or execrable*. Thus *Virgil* calls the Love of Gold, *Auri sacra fames*. In both these Significations it is used by Medicinal Writers. Thus,

SACRA FISTULA, is the Spinal Marrow, according to *Blancard*.

SACER IGNIS, is a malignant Species of *ERYSIPELAS*.

SACER MORBUS, is the Epilepsy.

SACER MUSCULUS, is the Name of a Muscle, called by *Winflow* *Transverso Spinalis Lumborum*.

This Muscle is composed of several oblique converging or transverso-spinal Muscles in the same Manner as in the Back and Neck; and it lies between the spinal and oblique Apophyses of the Loins, reaching to the *Os Sacrum*.

The lowest of these Muscles are fixed to the superior lateral Parts of the *Os Sacrum*, to the *Ligamentum Sacro-Iliacum*, and to the posterior superior Spine of the *Os Ilium*. The rest are fixed to the three lowest transverse Apophyses, and to the four lowest oblique Apophyses of the Loins, and to their lateral Tuberosities. From thence they run up to all the spinal Apophyses of these Vertebrae, the external, or those that appear first, being longer than the internal, which lie immediately on the Vertebrae, especially toward the lower Part. *Winflow's Anatomy*.

SACRUM OS.

The *Os Sacrum* is situated in the posterior and lower Part of the Trunk, as the Basis by which the whole Spine is supported, and from hence it has by some been termed *Os Basilare*.

Its Figure comes near that of a long Triangle, with the Basis upward, and the Apex downward. It may be divided into the upper Part or Basis; the lower Part or Apex; two Sides, the anterior or concave; and the posterior or convex; and two lateral Parts or Edges. We here consider it as one Bone only, as it is in an adult Subject.

In young Subjects it is made up of several distinct Pieces, termed false Vertebrae, united together by Cartilages, which in time diminish, grow hard, and disappear, leaving no Marks behind them, but little Ridges or Lines more or less prominent. These Pieces are five in Number, and sometimes six, all of them resembling the Vertebrae in something. The first is much larger than any of the true Vertebrae; but their Size diminishes by very great Degrees as they descend, so that the lowest, which makes the Point of the *Os Sacrum*, has scarcely the Appearance of a Vertebra.

In the anterior or concave Side, we commonly see four Pair of large Holes, and sometimes more (according to the Number of false Vertebrae) disposed in two longitudinal Rows, and appearing to be formed by the Notches in the original Pieces meeting each other. Between these two Rows of Holes, through the whole Length of the Middle of this Side, we observe the Bodies of five or six false Vertebrae cemented together, of which the uppermost or first comes nearer to the Structure of a true Vertebra than the rest. The last is very small, and below the Holes it has a Notch on each Side, and sometimes a Production in the Shape of a little Horn.

The posterior or convex Side is very uneven. The same Number of Holes appear here, as in the fore-side, and disposed in the same Order, but they are not so large. Between the two Rows of Holes, is a Sort of spinal Apophysis more or less imperfect, especially toward the upper Part. In these Apophyses we often find Openings, sometimes in the superior, sometimes in the inferior, and thus perpendicular Fissures are formed of different Breadths. Sometimes a transverse Open-

ing is left between the several Spines; but in all that has been here said, great Varieties are observable. On the Outside of each Row of Holes are Tuberosities which appear like transverse and articular Apophyses confounded together. At the Basis or upper Part of the *Os Sacrum* are two articular Apophyses, answering to the inferior ones of the last Vertebra of the Loins. Below each of these Apophyses, laterally, is a large Notch; and between them, we see distinctly enough the upper Side of the Body of the first false Vertebra, which is like that of the Lumbar Vertebrae, being very much inclined backward; so that the Body of this false Vertebra, as well as of the last true one, is longer before than behind. From this Obliquity it happens, that the *Os Sacrum* and last Lumbar Vertebra, form, at their Connexion, a very considerable Angle.

Behind the Body of this first Vertebra of the *Os Sacrum*, between the articular Apophyses lies the Orifice of a large Canal, triangular and flat, which runs down in the Middle Substance of the Bones between the two Sides, and between the four Rows of Holes, behind the Bodies of all the false Vertebrae. It contracts as it descends, and communicates with all the large Holes, being the Continuation of the great Canal of the Spine. It is often broke into by the Fissures already mentioned, on the Back-side.

The lateral Parts are broad toward the Top, forming on each Hand, a large, uneven, irregular, cartilaginous Surface, in the Figure of a great S, and sometimes of a Bird's Head. By these two Sides the *Os Sacrum* is connected with the *Os Innominata*, by a cartilaginous Symphysis. Between each of these lateral Sides, and the nearest posterior Holes, there is a large rough Depression, and under that, another not so large. These Depressions are often pierced by several Holes, which lose themselves in the inner Substance of the Bone. *Winflow's Anatomy*.

SACRA TINCTURA. See *HIERA*.

In *Peulius Agineta*, L. 7. C. 8. there are several *Hieras* described, which imports the same as *Sacra*. Thus there is the *Hiera Archigenis*, *Hiera Antiochi*, *Hiera Jusli*, *Hiera Galeni*, and *Hiera Ruffi*.

SACRA VASA. The Vessels which belong to the *Os Sacrum*, and Parts adjacent.

SACRANUS COLOR. A Purple Colour. *Johnson*.

SACRES. Pigs about ten Days old. *Castellus* from *Langius*.

SACRO-LUMBARIS MUSCULUS. This is a long complex Muscle, narrow and thin at the upper Part, broad and thick at the lower, representing a kind of flat Pyramid. It lies between the Spine and posterior Part of all the Ribs, and along the back Part of the *Regio-Lumbaris*, all the Way to the *Os Sacrum*.

Through all this Space it is closely accompanied by the *Longissimus Dorsi*, which lies between it and the Spinal Apophyses of the Vertebrae, a narrow, pinguious, or cellular Line running between them. The Name of *Lumbo-Costalis* would better express the Situation of this Muscle than that of the *Sacro-Lumbaris*. It might be termed *Medius Dorsi*, to distinguish it from the *Latissimus* and *Longissimus Dorsi*, between which it is placed.

It is fixed below by a broad thin tendinous Aponeurosis to the superior Spines of the *Os Sacrum*, and to the neighbouring lateral Parts of that Bone; and lastly, to the external Labium of the posterior Part of the *Crista Offis Ilium*, all the Way to the great Tuberosity. The Aponeurosis covers and adheres very closely to the lower Part of the *Longissimus Dorsi*, and where it is fixed to the *Os Sacrum*, it is a little covered by some Insertions of the *Gluteus Maximus*.

From thence this Muscle runs upward, and a little laterally, over all the *Regio-Lumbaris*, the Aponeurosis sending off from its Inside a Mass of fleshy Fibres, which are divided from below upwards, into several large Fasciculi inserted in all the transverse Apophyses of the Loins.

Afterwards it runs up obliquely over all the Ribs, sometimes as high as the two or three lowest Vertebrae of the Neck, sometimes higher, and sometimes it ends at the first Vertebra of the Back.

Through all this Extent the Side of the Muscle next the *Longissimus Dorsi*, or Vertebrae, is very even; but that next the Ribs is divided into several Portions, in an oblique Disposition from below upwards, resembling in some measure the Branch of a Palm-Tree. These Portions or Digitations are fixed in the transverse Apophyses of the Neck, in the Tuberosity of the first Rib, in the lower Part of the angular Impressions of the ten following Ribs, and near the Extremity of the last Rib.

This Digitation belonging to the last Rib is broad, and more fleshy than tendinous. Those of the other Ribs are tendinous, flat and narrow, and those of the Neck are something fleshy, but very slender. The most superior Portions are longer and narrower than those below them, they growing gradually shorter and broader as they descend.

In dissecting this Muscle with Care, between these Portions

and the Ribs, we meet with several long thin muscular Fasciculi, which crossing the Portions, and adhering to them, are afterwards fixed in the Ribs above and behind the Insertions of the several Portions.

These muscular Fasciculi begin at the transverse Apophyses of the same Vertebrae of the Neck, from whence they run down and are fixed in the eight or nine following Ribs. Sometimes they pass over several Ribs without being inserted in them; but this varies in different Subjects, and sometimes in the two Sides of the same Subject.

In this manner these Fasciculi form a particular Plane, which some take for the internal Portion of the *Sacro-Lumbaris*; others, after *Steno*, call it *Musculus Accessorius Sacro-Lumbaris*. Some take it for a distinct Muscle, calling it the *Cervicalis Descendens* of *Diemerbroeck*.

The two *Sacro-Lumbares* maintain the Back and the *Regio-Lumbaris* in their natural Situation when we stand or sit; and by the Relaxation of their Fibres more or less, the Trunk is proportionably bent forward by the Weight of the Head and Breast. They also extend the Back and Loins in all Postures, keep them steady and fixed under the Weight of Burdens, and bend the Loins backward.

One of them acting alone, may have the same Uses of bending forward, extending, resisting, and bending backward, but with less Strength, and in an oblique Direction, as when the Body is inclined obliquely forward, and to one Side at the same time, or extended from that Posture. They also serve to counter-balance the oblique Muscles of the Abdomen, in turning the Thorax upon the Pelvis.

These Muscles may in some respects be compared with the *Splenii*; that is, their superior Insertions with the Mastoide Insertions of the *Splenii*, and their inferior Insertions with the vertebral Insertions of these Muscles. The Mastoide-Portion of the *Splenius* is longer, more distant from the Articulation, and more disposed to perform large Motions, and to resist great Efforts than the vertebral Portion. In like manner, the Costal Portion of the *Sacro-Lumbaris*, by the Length of the tendinous Series, by their graduated Insertions in the Ribs, and by their Obliquity, is better disposed for the Uses already mentioned than the vertebral Portion.

The small muscular Fasciculi which cross these tendinous Portions, called *Musculus Sacro-Lumbaris Accessorius*, seem to counterbalance and moderate the Depression of the Ribs in the great Efforts of the *Sacro-Lumbaris*.

The Use of these Muscles in progressive Motion, is not sufficiently demonstrated. It is supposed that while we lift one Leg to make a Step, the *Sacro-Lumbaris* of the other Side sustains the Vertebrae of the Loins and Back, to prevent their yielding to the *Psoas* which lifts the Leg, and puts it in Motion; but the Direction of the greatest Part of the Fibres of the *Sacro-Lumbaris* is very improper for such an Use.

The Use of the *Sacro-Lumbaris* in Respiration is also attended with Difficulties; for when the Body is very much inclined forward, and even much loaded, the Ribs continue still to be raised with the same Ease as they are depressed, tho' the *Sacro-Lumbaris* is principally employed in this Case; but it is to be remembered that I speak here only of bending and loading the Back, not of loading the Shoulders. In the first Case, the Ribs move easily, but not in the second. *Winslow's Anatomy*.

SACTIM. Vitriol. *Rulandus*.

SAIDIR. The same as SCORIA. *Rulandus*.

SAEPAE. Large eroding Pustules. *Castellus*, from *Foetus*.

SAFFATUM, is, according to *Johnson*, a Species of Salt, but he does not explain what.

SAGADENON. *σαγαδενον*. A Name for the best Species of Opopalsamum, which *Galen*, de *Antidot*. L. 1. C. 4. says, was produced in *Palestine*.

SAGAPENUM. *Offic.* C. B. P. 494. *Raii Hist.* 1. 1844. *Schrod.* 214. *Park. Theat.* 1544. *Ger.* 898. *Emac.* 1056. *Mill. Bot. Offic.* 384. *Sagapenum Veterum*. J. B. 3. 156.

This is a Gum flowing, as is supposed, from a Species of *Ferula*, which grows, according to *Dioscorides*, in the Country of *Media*, though it comes to us from *Alexandria*. It is of a reddish-brown Colour, made up of Drops usually clung and clotted together, of a somewhat clear horny Colour in the Inside, a little like *Assa Foetida*, but harder, with somewhat of the Garlick Smell. We sometimes see it in small Drops not clotted together, of a light yellowish brown Colour; but this is not often to be met with.

Sagapenum is opening and attenuating, cleansing the Breast of tough Phlegm, helping the Asthma and Difficulty of Breathing. It is likewise good for the Dropsy, promotes the menstrual Evacuation, and prevents hysteric Disorders. Outwardly applied, it helps hard Tumors and Swellings. *Miller's*

Bot. Off. See FERULA MAJOR, seu FÆMINA PLENI.

This Gum is imported from *Alexandria*. That is most esteemed which is pure, pellucid, on the Outside of a fallow, or brownish Colour externally, but within whitish; of an acrid Taste, and strong Smell like Garlick. It is attenuating and opening, and purges off viscid and serous Humours, lodged in the Stomach, Intestines, Uterus, Kidneys, Brain, Nerves, the Joints and Breast. Hence it is serviceable in a Dropsy, inveterate Cough, Asthma, Head-Ach, Convulsions, Epilepsy, Palsy, Tremors of the Limbs, Obstructions and Tumors of the Spleen, and Cholic. It provokes the Menses, and excites Urine; but destroys the Fœtus. *Schroder*.

SAGDA. The Name of a Gem mentioned by *Pliny*, L. 37. Cap. 10. of a green Colour, which he informs us, the *Chaldeans* find adhering to Ships. In *Samo-Thracia*, he farther tells us, a light black Gem is found, resembling Wood, which bears the same Name.

SAGIMEN VITRI. Alkaline Salt. *Rulandus*.

SAGITTA.

The Characters are;

The Root is fibrous, thick, fungous and creeping. The Leaves at first resemble those of Plantain, but afterwards the bearded Head of an Arrow; the Stalk is just as usual in umbelliferous Plants; the Flower is tripetalous, like that of the *Plantago Aquatica*; and the Fruit consists of a Collection of Seeds like a Strawberry.

Boerhaave mentions four Sorts of *Sagitta*, which are;

1. *Sagitta*; *aquatica*; *major*. C. B. 194. *Ranunculus, palustris, folio sagittato, maximo*. T. 292.

2. *Sagitta*; *aquatica*; *minor*; *latifolia*. C. B. P. 194. *Boerb. Ind. A.* 46. *Sagitta*, *Offic.* J. B. 3. 789 *Raii Synop.* 3. 258. *Sagitta minor*, *Ejusd. Hist.* 1. 619. *Sagittaria minor latifolia*, *Park. Theat.* 1247. *Ranunculus, palustris, folio sagittato minori*, *Tourn. Inst.* 292. ARROW-HEAD.

It grows in Brooks and Waters, flowers in May and June, and the Parts in Use are the Herb and Seed. It is, says *Matthioli*, of a cold and moist Temperament, and has the same Virtues as the *Plantago Aquatica*.

3. *Sagitta*; *aquatica*; *minor*; *angustifolia*. C. B. P. 194. *Ranunculus, palustris, folio sagittato, angustiori*, T. 292.

4. *Sagitta*; *aquatica*; *major*; *folio angustiore*. It has the Virtues of the *Plantago Aquatica*, but the Smell and Taste shew it to be of a heating Quality. *Hist. Plant. ascript. Boerhaave*.

SAGITTALIS SUTURA. The Sagittal Suture of the Cranium. See CAPUT.

SAGITTARIA. The same as SAGITTA.

SAGITTARIA ALEXIPHARMICA. *Offic.* *Canna Indica, radice alba, Alexipharmica*. *Raii Hist.* 3. 573. *Arundo Indica, angustifolia, flore rutilo, pediculis donata*, *Hist. Oxon.* 3. 250. *Agutiguapoobi Brasiliensis*, *Raii Hist.* 2. 1203. *Radix quædam in Malaca, quæ adversus vulnera Sagittis toxicis illitis solta, præsentaneum remedium est Garzias*, C. B. P. 301. *Radix Malaca quædam toxicis Sagittis resistens*, J. B. 2. 173. ARROW-ROOT, DART-WORT.

This Plant has a Root two or three Inches in Length, geniculated, of the Thickness of a Man's Thumb, white, and of a conic Figure, every Interode or Space between the Joints being half an Inch in Length, and every Joint sending forth several Fibres two or three Inches long, for attracting Nourishment. From the Root arise various Leaves on Pedicles three Inches in Length, and of a good Breadth, embracing one another, or the outer ones wrapping themselves about the inner, and surrounded with a white Ring at the Place of Apposition. The Leaves are four Inches long, and two Inches broad near the round Base where they are broadest, and are thin, fibrous, and grassy, and of a greenish-yellow Colour. In other Respects it is like the *Canna Indica*.

Sir *Hans Sloane* observed this Plant in the Gardens of *Jamaica* and the *Charibbee* Islands. It was transplanted to *Jamaica* from the Island of *Dominica*, and is highly valued on account of its alexipharmic Virtue, and its Efficacy against Wounds inflicted by poisoned Darts and Arrows; for which purpose it is frequently used by the *Indians*, who bruise the Herb, and apply it to the injur'd Place. *Raii Hist. Plant.*

SAGMINALIS HERBA. Vervain. See VERBENA.

SAGOU. See Palma, Japonica; spinosis pediculis; Poly-podii folio.

SAGZENE. A Name for two Medicines described by *Avicenna*, the greater and the less, which are recommended against cold Disorders of the Stomach, Intestines, and Uterus.

SAHAFATUM, or SAHAFATI. The same as ACHOR.

SAHARA. The same as PERVIGILIUM.

SAIC. Quicksilver.

SAIRE. The same as ESSERE.

SAK-

SAKMUNIA. The Arabic Name for Scammony.

SAL. Salt. For an Account of Salt, considered as a Chymical Principal. See **PRINCIPIA**, and **ACIDULÆ**.

A Salt is, by *Geoffréy*, defined to be a solid, friable, pellucid and sapid Mineral Body; dissoluble in Water, fusible by Fire, and easily concretible in Form of Crystals. This Definition agrees to alimentary Salt, Nitre, Vitriol, Alum, Sal-Ammoniac, and Borax.

OF ALIMENTARY SALT.

Alimentary Salt, or that which is used in Food, is distinguishable from all other saline Bodies by the cubical Figure of its Crystals, which it retains even in the least Particles, which are the Objects of Sense. It is of two Kinds, being either dug out of the Earth, from whence it is called Fossile Salt, or Sal Gem; or prepared by evaporating the Sea-Water, being from thence termed Sea-Salt; or by evaporating the Water of Salt-Springs.

OF FOSSILE SALT OR SAL-GEM.

There are several Kinds of this fossile alimentary Salt, differing from each other only in their Colour, which is white, grey, of a yellowish red, or pellucid like Crystal; which last, most properly called Sal-Gem, is preferred to all the rest, as being judged most pure. It is of an octagonal or cubical Figure, and salt Taste, pellucid like a Gem, and often resembles Crystal, both in Colour and Brightness. In the Mountains of *Catalonia*, near the City of *Cardona*, and also in deep Mines in *Poland* near *Cracow*, huge Rocks of this Salt are found, and they beat them to pieces with proper Instruments of Iron.

The Virtues of Sal-Gem are the same as those of Sea-Salt. This Salt is used as a Stimulus in Clysters and Suppositories given to soften and evacuate the indurated Fæces, in this or the like Manner:

Take of despumated Honey two Ounces; Sal Gem, a Dram and a half; boil them to a due Consistence for a Suppository. Or, take of Honey, boiled to a due Consistence, one Ounce; Sal Gem, and Species of Hiera, of each half a Dram, Diagridium, fourteen Grains; mix and make them into a Suppository.

Take of the Root of *Spanish* Pillitory half an Ounce; Leaves of Marjoram and Rue, of each one Handful; Leaves of Senna, Agaric, and the Pulp of Coloquintida, of each two Drams, boil in a sufficient Quantity of common Water to twelve Ounces, of strained Liquor, in which dissolve of Sal Gem two Drams, and add of Emetic or Antimonial Wine, three Ounces, for a Clyster in Apoplexies, and other sleepy Diseases.

In these Affections even the strongest and most stimulating Clysters are sometimes of no Effect, because the Intestines are become paralytic; and they are never to be used in an Inflammation of the Intestines. The Chymical Preparations of Sal Gem are the same as those of Sea-Salt. *Geoffroy*.

Fossile Salt is dug out of very deep Mines in *Transylvania*, *Hungary*, *Russia*, *Siberia*, *Tartary*, and many Places in *Germany*. But the most remarkable Salt Mines are those of *Bochna* and *Viliske*, not far from *Cracow* in *Poland*.

The Salt Mines near the small Town of *Viliske*, which (the Church excepted) is altogether dug hollow under Ground, have four Descents; of which the two principal being in the Town itself, are those through which the Salt is drawn up; the other two serve for letting down Timber and other Necessaries. These Descents or Holes are four or five Foot square, lined all the Way downwards with Timber. Above is a great Wheel, with a strong Rope of the Thickness of a lusty Arm, drawn about by a Horse, like as in a Horse-mill.

He that will descend, must cover himself with a Frock, and have another Man that fastens another Rope to the aforesaid big Rope, and having so tied it about himself as to sit in it, he takes him in his Lap, and holds him fast about; whereupon the big Rope being somewhat let down, another fastens likewise a Piece of Rope to the other thick Rope, and does like the former, seating himself in it, and taking and clasping another Man in his Lap, and being also let down a little Way, gives Place to others to do the like; in which manner, thirty, forty, and more Persons, may be let down all at once; of whom the first having touched the Ground, steps out and goes aside, the rest following him, and doing the like; and thus they descend to the Depth of a hundred Fathoms. But then they take a Lamp, and lead People about by strange Passages and Meanders, still more and more descending, till they come to certain Ladders, by which they go down an hundred Fathoms deeper, where there are double Passages and Holes,

one above another, in Abundance; for the Mine-men dig on still, and cut out every where, and on all Sides, as long as the Salt Vein lasts. The great Holes, to secure both the Town above, and the Work below from falling in, are carefully supported by strong and well-compacted Timber.

These Mines were first discovered in 1251. Within them is found a kind of subterraneous Republic, which has its Polity, Laws and Families, and even public Roads, Carriages, and Horses for drawing the Salt to the Mouth of the Quarry, where it is taken up by Engines. These Horses, when once they are down, never see the Light again; but the Men take frequent Occasions of breathing the Village Air. When a Traveller is arrived at the Bottom of this strange Abyss, where so many People are interred alive, and where so many are even born, and have never stirred out, he is surprized with a long Series of lofty Vaults, sustained by huge Pilasters cut with the Chisel, and which, being themselves Rock-Salt, appear, by the Light of Flambeaux, which are incessantly burning, as so many Crystals or precious Stones, of various Colours, shedding a Lustre almost intolerable to the Eye.

The Rocks of Salt are hewn in the Form of huge Cylinders; the Workmen using Hammers, Pick-axes, and Chisels, much as in our Stone-Quarries, to separate the several Banks of Stone. As soon as the massive Pieces are got out of the Quarry, they break them into Fragments, fit to be thrown into the Mill, where they are ground and reduced to a coarse Farina or Flower, which serves all the Uses of Sea-Salt.

In these Mines there are three Kinds of Sal Gemmæ, one is common, coarse and black; the second somewhat finer and whiter; the third very white, hard and transparent, which last is the Sal Gemmæ of the Druggists and Dyers. It cuts like Crystal, and is frequently used for Toys, Chaplets, little Vases, and the like; the other Sorts are less compact, and only fit for Kitchen Uses. The coarse and black Salt is cut out in great Pieces, roundish, and three *Polonian* Ells long, and one Ell thick, which are sold from fifty to seventy *Polonian* Florins.

The greatest Pieces lie before their Doors, where they are lick'd by the Cattle as they pass. The Colour of these Salt-Stones is darkish grey, with some Mixture of yellow.

But the principal Wonder of the Place is, that through these Mountains of Salt, and along the Middle of the Mine, there runs a Rivulet of Fresh-water, sufficient to supply the Inhabitants.

The Imperial Salt-works at *Soowar*, near *Eper* in *Upper Hungary*, are also remarkable for many curious Particulars; of which *Dr. Bruckman* gives the following Account. They are at least an hundred and forty Fathoms deep. In the Cuts of them, one sometimes finds Alleys of Rock-Salt, of the most delicate blue and yellow Colours. He observed, that the first Colour being exposed to the Sun for some Days, lost entirely that beautiful Ultra-marine, and became white as the other Rock-Salt, which did not happen to the yellow, which preserved its Colour; but when you pound them together, the Salt was neither blue nor yellow, but extremely white.

Melissantes, in his Geography, speaking of Salt-works which the *Spaniards* have in *Catalonia*, says, that there is Rock-Salt, the Colour of which is so diversified, that it comes near the Rain-bow, in having green, red, yellow, and blue Colours; but that, by first preparing, and then grinding it, it became white. The same happens also to the red Rock-Salt of *Salzburg*, which being pounded becomes white.

But one Thing very remarkable, in the Mines of *Soowar*, is a Chapel, which can easily contain a hundred People, cut in the Rock-Salt, with an Altar, a Pulpit, a Sacrify, Chairs and Forms cut in the same Rock. They celebrate once every Year, the Week after *Epiphany*, divine Service in this Chapel, and the Sermon is always preached by a Jesuit of *Eper*. This Service was founded for the Officers of the Excise and the Miners.

But that which is most curious in these subterraneous Fosses, are the Flowers of Salt, which grow as the Beard of a Goat, with this Difference only, that these are much whiter and finer. One cannot enough admire these Effervescences, which seem to vegetate, yet one cannot find them in all the Cuts, nor at all Times, but they appear and grow according to the Temperature of the Seasons, which in those Parts is very wholesome. These Sort of Plumes of Salt are very brittle, they melt also in moist Places, and dissolve into an Oil; but are nevertheless the most pure Salt, the finest, the most acid, the whitest and most beautiful; so that it is not without Reason they have given it the Name of the Flower of Salt.

At *Neufol*, there is a Statue of Rock-Salt, as large as the Life, which serves as the Barometer of the Town; for when it begins to sweat or grow moist, it presages Rain or wet Weather; but when it is dry you may certainly promise yourself settled Fair.

There are also several Salt-mines in *England*, about the *Wyches* in *Cheshire*.

The artificial Sea-Salt is obtained by the Heat of the Sun, or by Coction from Sea-Water, or Salt Springs or Wells. In *Britany* in *France*, the Manner of making Sea-Salt is, to dig shallow broad Trenches, which are lined with Clay. These being filled with Sea-Water by the Tide, the Heat of the Sun evaporates the Water, and a large Proportion of Salt remains behind. In *Normandy* they make small Heaps of Sand upon the Shore, which imbibe the Sea-Water, and the insipid Humidity being afterwards evaporated by the Heat of the Sun, the Salt remains among the Sand. To separate it, they first boil it in fresh Water, and then having strained off the Lixivium, containing now only a Solution of Salt in fresh Water, they boil it again with a gentle Heat in leaden Cauldrons, to a certain Degree of Thickness; then putting out the Fire, the Salt chrySTALLIZES.

Salt is made from Salt Fountains likewise, by boiling the Water till the Humidity exhales; and whilst it is boiling, they mix with it either Gall or Bullocks Blood, which makes the Salt form itself more easily into larger Lumps; for the Parts of the Gall or Blood inviscate or entangle the bituminous or earthy Parts, which hinder the Concretion of the Salt, and are altogether thrown up as a Scum, or at least remain in the Strainers. Sea-Salt, prepared by the Heat of the Sun, is preferable both for culinary and officinal Uses. The Taste of it is well known; the Colour is greyish, because of the Particles of Earth mixed with it; but if it be dissolved and chrySTALLIZED by a gentle Heat, it is formed into very white cubical Grains. Salt made by boiling is white, but the Grains thereof are not exactly cubical, because of some Mixture of different Salts.

Before Sea-Salt has felt the Fire, it changes neither the Syrup of Violets, nor Tincture of Heliotropium, it makes no Effervescence with the Oil of Tartar per Deliquium, but discovers, however, some small Signs of Acidity. It lessens the Transparency of the urinous Spirit of Sal-Ammoniac, and darkens the Colour of the Infusion of Gall. By other Trials it seems likewise to discover an alkaline Nature; for it turns a Solution of corrosive Sublimate white, and makes an hot Effervescence with Oil of Vitriol. A Solution of Salt in Water being evaporated to a Pellicle, and then set in a cool Place, the greatest Part of it will be formed into cubical ChrySTALS; but the Remainder cannot be brought to concrete without Heat; and even then it is formed into no regular Figure, and soon runs per Deliquium in the moist Air. Hence it is evident, that Sea-Salt is made of an Acid of a peculiar Kind, and of a mineral Alkali, and that the acid Portion is so far entangled and involved in the other, as hardly to be able to exert its proper Virtues in a concrete Form.

From Sea-Salt, by Distillation in a Retort, we obtain an acid Spirit, which turns the blue Tincture of Heliotropium into a purple Colour, and ferments vehemently with Oil of Tartar, but without any sensible Heat; but does not raise any Effervescence with Lime-Water. This acid Spirit is the only Dissolvent of Gold and Tin, but cannot dissolve Silver or Lead; and it communicates this Quality to Spirit of Nitre and of Vitriol; which, by being mixed with it, becomes *Aqua Regia*. If this Spirit, when very pure, be saturated with the alkaline Salt of Tartar, it concretes into a *Sal Salsus*, resembling Sea-Salt in Taste, and in the cubical Figure of its ChrySTALS; whence it appears that Sea-Salt is an Acid perfectly saturated with an alkaline Salt. The ChrySTALS of Sea-Salt crackle and crepitate in the Fire.

Its Virtues are, to check too great Fermentation, and prevent Putrefaction; and for that Reason, it is used by Chymists for macerating Plants, to keep them from rotting; and what it does to Plants in macerating, is not different from its Effects on the Aliment in the Stomach; where it both checks too great Fermentation, and prevents Putrefaction. It likewise calms the too great Ebullition of the other Fluids of the Body; and, as it readily joins with volatile urinous Salts, and changes them into a Sal-Ammoniac, it is fitted to soften the Acrimony of the Fluids, and promote the Depuration thereof by Urine. By its little Points it likewise stimulates gently the solid Parts, and thereby increases their oscillatory Motion, by which Means all the Functions of the Body are better performed. On these Foundations are built all the Virtues ascribed to Sea-Salt, of drying, heating, deterging, digesting, opening, attenuating, increasing the Appetite, exciting to Veneriness, and of resisting Poisons and Putrefaction.

It is ordered in an *Aprepsia*, or want of Digestion, in want of Appetite, in Colliveneity, and Obstructions of Urine, and is an Ingredient in the *Unguentum Emulatum*. It is much esteemed by the Chymists, as being the only Menstruum for Gold. *Geoffroy*.

Take any Quantity of Salt, procured either from the Rock, Sea-water, or briny Springs, and as pure as possible; dissolve it in a sufficient Quantity of Water, and digest it for a long Time, in a Vessel so closely stop'd, that none of the Water may evaporate; and, by these Means, an insipid Earth will fall to the Bottom, which cannot again be dissolved in Water. Pour off the clear Liquor, and let it evaporate in a Place free from Dust, till a Pellicle or Scum like a thin Skin appears on the Top; and then set it in a cool Place, and the Salt will shoot into transparent ChrySTALS of the Figure of a Cube or Dye. Pour off the clear Water from the ChrySTALS, and evaporate again to a Pellicle, and set it in a cool Place, as before, and more ChrySTALS will be formed, but less pure and transparent than the former. Repeat this Evaporation and chrySTALLIZATION so long as any ChrySTALS will shoot, and then an oily, saline Liquor will remain, which is not rendered dry without a good deal of Difficulty, and a considerable Heat long continued. After this has been evaporated to Dryness, it will attract the Moisture of the Air, and run into an Oil *per Deliquium*, more readily than any other Substance whatever, and then lets fall a small Quantity of insipid Earth not dissolvable by Water; dry the remaining Oil and calcine it, then expose it to the Air till it runs again into an Oil, which will let fall more insipid Earth. If these Calcinations and Solutions are repeated a sufficient Number of Times, nothing will be left at last but pure insipid Earth, of which there will be a pretty large Quantity, if all that is left after each Solution be collected together. All the other Parts being rendered volatile fly off into the Air.

By the Analysis of Salt it appears that common Salt consists of a pure insipid Earth, an acid Spirit extremely volatile, and Water; and it is highly probable that this Earth, before it was united to the acid volatile Spirit, was of an alkaline Nature, and perhaps exactly the same with the *Natron* of the Ancients. What makes this the more likely is, that if any fixed alkaline Salt is impregnated with the acid Spirit of common Salt, a Salt will be formed very nearly the same with common Salt, which the Chymists call regenerated Salt.

Common Salt has many very extraordinary Properties.

1. The smallest ChrySTALS of common Salt are always of a cubic Figure, that is the Figure of a Dye.

2. Upon the Application of Fire to it, it crackles. This Decrepitation or Crackling of Salt, seems to proceed from the Air contained in its Pores, which being rarified by the Fire, breaks its Prison and makes its Escape.

3. Spirit of Salt is the only Thing in Nature that will dissolve Gold; but not without being joined with the Spirit of Nitre.

4. Salt preserves all vegetable and animal Substances from Putrefaction, as also Water, and is itself incorruptible. This Property it entirely owes to the Acid it contains.

5. A greater Quantity of common Salt will be dissolved in a given Quantity of Water, than of any other Salt whatever; for six Ounces of common Salt may be dissolved in sixteen of Water; but it must be observed, that warm Water will dissolve more Salt than cold, and that in Proportion to the Heat of the Water. Thus Water in that Degree of Heat which makes it boil, dissolves more Salt than in any less Degree of Heat, inasmuch, that as it grows cool, it will every Moment let fall more and more of the Salt which was dissolved in it, which will appear at the Bottom of the containing Vessel undissolved; and when the Water is so cold as to freeze, it will expel almost all the Salt, which will stick to the Bottom of the Ice in a solid Form.

6. Salt dissolved in Water of a Heat equal to that of the Atmosphere, renders the Water considerably colder. And yet,

7. Notwithstanding this Increase of Coldness, the Salt will keep the Water from freezing, inasmuch that Water, wherein Salt is dissolved, shall not freeze near so soon as pure Water: And hence we may observe, that Salt, when interposed between the small Particles of Water, has the Power of preventing their Association, that is, their Concretion into Ice; otherwise Salt, by increasing Cold, would promote Freezing.

8. If Spirit of Salt is poured upon Ice reduced to Powder, it will increase the Coldness thereof to a surprizing Degree; to a Degree much greater than ever was produced naturally, and in which every Animal must die.

9. Salt thrown upon burning Coals greatly increases their Heat. This proceeds from the Air, Water and Acid contained in the Body of the Salt; for the Air being forced out of the Salt by Heat, acts upon the Fuel like a Pair of Bellows; and that this will increase the Heat of Fire is known to all Smiths, who, when they would make their Fires intensely hot, frequently sprinkle Water upon the burning Coals.

10. Salt made extremely dry, attracts the Moisture of the Air considerably, even in the dryest Seasons, insomuch that it is a common Thing for People who deal in Salt, to buy it at the *Wyches* very dry, and to sell it a great many Miles distant, for less *per* Hundred than it cost them; yet are they considerable Gainers, because the same Quantity of Salt that weighs a Hundred at the *Wyches*, will be much heavier, after having imbibed the Moisture of the Air.

With respect to these Properties of Salts, it may be remarked, that as Putrefaction is, always, in Proportion to Heat, that vast Body of Water, which we call the Sea, would putrefy and stink, (as we find, in effect, fresh and stagnating Waters do) especially in hot Climates and calm Weather. Now this Putrefaction would be fatal not only to all the Animals contained in the Sea, but also to those Land Animals that came within the Influence of the Vapours arising from this vast Body of putrefying Waters, which probably would be all Animals upon the Face of the Earth.

Now we find, by the fourth Property of Salt, that it preserves all vegetable and animal Substances from Putrefaction, as also Water; and that there is a great Quantity of this Salt in the Sea, is a Proposition unnecessary to be proved.

By Property the fifth, we find, that a greater Quantity of Salt will be dissolved in warm Water than in cold; and by this it should seem, that more Salt should be dissolved in hot Climates, and in hot Weather, where there is more Occasion for it to guard against Putrefaction, than in cold Climates and cold Weather, where there is less Occasion for it; accordingly we find, by repeated Experience, that in the *Mediterranean* Sea, where the Climate is hot, one Pint of Water contains an Ounce of Salt; but in the *Baltick*, where the Climate is cold, the same Quantity of Water contains only half an Ounce. 'Tis as certain, that under the Equator, the Sea-Water contains still a greater Proportion of Salt, and those Seas that lie more Northward than the *Baltick*, a less.

Agreeable to this is an Observation made by a Friend of Mr. Boyle, at his Desire, who found, by a Glass Instrument made on Purpose, that the Sea-Water increased in Weight, and consequently in Saltiness, the nearer he approached the Line.

The same Author farther informs us, that at *Manar*, near the great Cape of *Comori*, where the famous Pearl-Fishing is carried on, and the Climate is very warm, the Ocean is so salt as to deposit a good Quantity at the Bottom in hard Lumps.

We learn farther, from Property the sixth, that Salt renders Water, wherein it is dissolved, colder than it would otherwise be. Now, as Putrefaction is in Proportion to Heat, this Property must also guard against Putrefaction in hot Climates, and in hot Seasons.

Dr. Halley, in the Philosophical Transactions, has a Dissertation, to shew, that as Salt is perpetually conveyed to the Sea by Rivers, the Sea must daily acquire a greater Degree of Saltiness; insomuch, that if we had any authentic Observations relative to the Degree of Saltiness of the Sea, made at distant Periods of Time, we might from these calculate the Age of the World.

But if there is any Truth in these Observations I have made above with respect to the Saltiness of the Sea, as there undoubtedly is, Dr. Halley's System, however pretty and ingenious, must entirely fall to the ground; as the Reader will easily perceive, if he considers, that the Sea was, in all probability, as salt a Fortnight after the Fall of Adam as at this time, since the Necessity and Convenience of it were as great then as now: And it is very unlikely that the Almighty should create his Works imperfect, and leave them to be brought to Perfection by a long Series of Time.

I must add, that although Salt is incorruptible, yet it is capable of being so far destroyed, as to remain no longer in the Form of Salt; as appears by its Analysis. Now, though what the Doctor says be true, that Salt is perpetually brought into the Ocean by Rivers, and that the Exhalations of Water from the Sea are perfectly fresh, yet the Consequence which he thence draws, that the Sea grows every Age more salt, may not be true; for it is highly probable that Salt, by the alternate Actions of other Bodies upon it, may undergo such a Sort of Transmutation, as we have above described in its Analysis; and then the volatile Parts, which constitute the specific Nature thereof, and render the fixed Part, or Earth, dissolvable in Water, being disunited from the fixing Earth, may very likely fly off, and mix with the Air; and then the fixing Earth, now no longer dissolvable in Water, will sink by its own Gravity to the Bottom. And if we consider (as Sir Isaac Newton observes) that Nature delights in Transmutations, it will appear more probable, that there is a perpetual Generation and Dissolution of Salt carrying on in the World.

Before Sea-Salt is distilled, some Preparations are necessary, and especially Calcination or Decrepitation; for since the

Grains of Salt fly and crackle in the Fire, they would burst all the Vessels used in the Distillation, except the watery Fluid, with which they abound, was first carried off by Calcination. This Decrepitation arises from the watery Fluid contained and inclosed between the Particles of the Salt, which being dissolved by the Heat, burst the Prison wherein they were detained, separating the Particles that surround them with a kind of Explosion. The Decrepitation or Calcination of Salt is performed in this Manner:

The Salt is set on lighted Charcoal, in an open earthen Vessel, and stirred constantly with an Iron Spatula. As soon as the Salt begins to be thoroughly heated, it makes a crackling Noise, which increases for some time, and then ceases altogether. When all the Noise is over, the Salt is decrepitated, calcined, dried and burnt, and remains in the Vessel in Form of a Powder. This decrepitated Salt serves for cementing Minerals or Metals, for the Distillation of Spirit of Salt, and for many other chymical Operations.

THE DEPURATION AND CRYSTALLIZATION OF SEA-SALT.

Dissolve common Sea-Salt in six times its Quantity of Rain-Water, strain the Solution hot through a close Linen-Bag, so often as to render it perfectly limpid; then exhale away in a Glass-Vessel one sixth Part of the Water; set the Remainder in a quiet cool Place for three Days, in a Vessel covered to keep out the Dust; if it deposits any Fæces, pour off the Liquor from them by gently inclining the Vessel; if it deposits none, the Liquor is perfect, and may now be evaporated to a Pellicle: Again set it in a cool quiet Place for twenty four Hours, during which time it will shoot into cubical Crystals. Carefully pour off the Liquor remaining after Crystallization, dry the Salt with a gentle Heat, and keep it separate. This is the Salt that I commonly employ for chymical Uses. Let the remaining Solution be again evaporated to a Pellicle, and set to shoot as before. By thus continuing to repeat the Operation, the Liquor will at last become thick, unctuous, austere, and hard to dry, and scarce afford any Crystals. If the Salt thus purified be decrepitated in the Fire, and afterwards fused with a strong Heat, then poured out upon a dry Marble, it resolves in the Air, and deposits earthy Fæces; from which the Liquor being carefully separated, then inspissated, calcined, poured out, and suffered to run in the Air; the Operation being thus repeated, the Salt at length vanishes into the Air, as a very ancient chymical Writer has truly observed.

R E M A R K S.

Crystallization is the only Method of procuring Salts pure and simple, when their innate Virtue, whilst the Salts are diluted with a certain Proportion of Water, unites the similar Parts together, and separates the dissimilar; and the Water, being attracted more by one Salt than another, one Salt sooner extricates itself than the other. And unless Salts be thus previously depurated, it is in vain to expect they should afford pure Spirits, which are necessary to certain Operations. If any Sea-Salt were in Nitre, the Nitre, upon Distillation, would afford not an Aqua-fortis, but an Aqua-Regia; and the same holds true of Sea-Salt, if any Nitre be mixed among it. The Salt thus obtained is such a Dissolvent of Gold, that, without its Addition, Gold can no otherwise be dissolved, except by fusing with Metals. This Salt is a wonderful Preservative, by means whereof all the Parts of Animals and Vegetables are preserv'd from Putrefaction.

GLAUBER'S SPIRIT OF SEA-SALT.

1. To three Parts of Sea-Salt, prepared as above, and put into a Glass-Retort, pour one Part of the strongest Oil of Vitriol, at the Instant they mix, a volatile white Vapour rises, which is to be carefully avoided, as being suffocating, and capable, if but once drawn in with the Breath, to stop the Action of the Lungs irretrievably. Directly apply a large and cold Glass-Receiver, lute the Juncture, apply a very small Quantity of Fire at first, for a furious Spirit will long continue to come over so as to blow through the Luting, or break the Vessel; so that the Fire must be kept gentle for three or four Hours: Then increase it a little, and a less volatile Liquor will come over. After eight Hours have been employed upon the Operation, urge the Fire till the Iron-Pot becomes ignited, and no more Liquor rises; then let all cool, and when the Neck of the Retort is no longer hot, take off the Receiver; the Liquor will fume; and beware of receiving the Fume in with the Breath. Pour it into a Glass well-fitted with a Glass-Stopper, and set it in a cold Place, otherwise

wife the Glas often bursts, by means of the Motion of the Vapour. If thus kept for Years, a white suffocating Vapour immediately breaks out upon opening the Vessel; but if the Spirit thus produced be carefully distilled in a Glas-Body, under a Chimney, into a Receiver, the volatile Spirit will come over, while there remains at the Bottom a more fixed Liquor, of a Colour betwixt a yellow and a green. This Liquor remains quiet without exhaling, but that which comes over into the Receiver has a violent suffocating Volatility, and may be kept apart as a pure volatile Spirit of Salt in a close Vessel.

2. To three Parts of purified and dry Sea-Salt, put into a Retort, add two Parts of clean Rain-Water, and one Part of the strongest Oil of Vitriol. Let the Oil of Vitriol fall in by slow Drops, to prevent the Bursting of the Vessel, by the sudden Heat that would rise from mixing in the whole at once. The Mixture will grow hot, place the Retort in a Sand-Furnace, and apply a capacious Receiver; distil gently for the first four Hours, while the Water comes over slowly; otherwise, if made to rise briskly, it always cracks the Receiver. After this, increase the Fire gradually; the Spirit of Sea-Salt will come over, which is then known to rise, when the Liquor runs in spiral Veins. Now raise the Fire, and gradually urge it, till at length the Iron-Pot grows of a red Heat, and no more Liquor comes over; at which time the Spirit will not fume. Then suffering all to cool, pour out the Spirit, which is now neither suffocating nor smoking. If this be distilled again with a gentle Fire, in a Glas-Body, there will come over a limpid ungratefully acid Water, of excellent internal Use, being mixed with Juleps, in such Distempers as require it; an excellent fat Spirit will remain in the Bottom, of a Colour betwixt green and yellow.

3. In both Cases there will be left behind a very white and fixed Salt, that can only be fused with a violent Fire.

R E M A R K S.

It seems surprising that Oil of Vitriol should raise so volatile a Spirit, by being barely poured upon so fixed a Salt as Sea-Salt; which Spirit is again fixed by adding fair Water to it, and is not generated when the Oil of Vitriol is mixed with a strong Solution of Sea-Salt for Distillation; or again when the Oil of Vitriol is diluted with Water, and added to the Sea-Salt; in which three Ways this surprising and suffocating Volatility is fixed, and render'd unhurtful; but when the Spirit, thus fixed and render'd wholesome, is urged with the Heat of a hundred Degrees, it lets go its Water, and remains rich, very fat, thick, gratefully acid, fragrant, and of a greenish Colour, and as perfect as can be any way obtained. But here again are certain Limits, for only one Part of the Salt is thus converted into acid Spirit, while the others remain fixed with the Oil of Vitriol. I could scarce gain more than a third Part of pure Spirit, separable from the Water, in proportion to the Salt. This Spirit has some Properties in common with other Acids, and some particular. It is particularly grateful to the Stomach, excites the Appetite, attenuates mucous Humours, resists Putrefaction, and corrects the Bile, when either too acrimonious, large in Quantity, or corrupted. It is of excellent Use in curing Gangrenes of the Gums, Mouth, or Tongue, it prevents the Generation of the Stone, and, according to *Helmont*, helps to dissolve it. It is serviceable in the Strangury attending Old-Age. If the strongest Spirit of Salt be mixed with thrice its Weight of Alcohol, and the two be thoroughly united together, by two or three Distillations, they make a volatile, oily, acid, fragrant, and balsamic Spirit of great Virtue. This acid Spirit dissolves Gold when very strong, or render'd more noble by being several times drawn over from Sea-Salt. In short, this Liquor exceeds all that can be said of it; and this is a highly useful Experiment, which we owe to the Industry of *Glauber*.

SPIRIT OF SEA-SALT WITH BOLE.

1. Take six Pounds of pure dry Sea-Salt, put it into two earthen long Necks, each of them containing three Pounds of Salt; put the long Necks into the Fire, and cover them with Tiles to prevent any thing falling in. Let the Fire be placed around them at some Distance first, and afterwards gradually nearer, and at length up to their Sides. The Salt will for a long time continue to crackle strongly; but this Decrepitation at length ceases, when both the long Necks are thoroughly ignited. When the Fire is burnt down, the Salt is found white, pulverized, and will not crackle, when thrown into the Fire. It loses always one fourth in the Decrepitation, but seems otherwise unchanged, though it would easily grow moist in the Air. It is now fit for Distillation; wherein had it been employed without Decrepitation, the Action of the Fire would have made it leap into the Receiver, so as to disturb the Operation, and sometimes to burst the Vessels; but its

wild crackling Spirit being drawn out by Calcination, it will afterwards calmly endure the Fire.

2. Take three Pounds of this Salt, as soon as it is decrepitated; grind it in a large hot Mortar, and presently mix therewith ten Pounds of common red Bole; divide the Mixture into two Parts, and charge two Long-Necks therewith, so that the Matter may not come into the Mouths of the Vessels, as they lie horizontally in the Furnace. Then fit them into the Reverberatory, building up the open Side of the Furnace with Bricks and Mortar, so as to leave the Necks of the Vessels to come through the Wall. Apply Adapters and large Receivers, and also a gentle Fire, increased by Degrees for twenty-four Hours, that all may become thoroughly hot and dry. Then light up a strong Fire in the Morning; a copious white Vapour will come over, like white Clouds, into the Receivers, and dewy Drops appear in the internal Surface thereof. Keep the Fire thus for two or three Hours; then increase it, upon which the Receivers usually become clearer, and the Spirit runs in unctuous Veins. And now the Fire may be increased to the utmost Degree, and continued thus for six or eight Hours, that the Vessels may be thoroughly ignited. When no more Spirit comes over, leave off; let all cool; carefully take away the Receivers, and empty the pure Liquor: It will be acid, gratefully fragrant, of a green Colour, and in the Quantity of about six Ounces from a Pound. The Bole remains saline. I have boiled it in Water, filter'd, and inspissated the Lixivium, and thereby procured a large Quantity of a yellow, saline, styptic Salt, that was not alkaline, but appeared a new Kind of Salt. And this has generally been my Success; whence I wonder *Beguinus*, and others, should write, that they could convert the whole Quantity of Salt into excellent Spirit of Salt. For my own part, I never could, with the utmost Care and Caution, in the most exact manner, and with the strongest Fire, long continued, obtain above half the Quantity, unless there had chanced to be any Moisture adhering to the Salt, or the Bole. This Distillation of Sea-Salt requires a stronger Fire than that of Nitre.

R E M A R K S.

This Spirit shews that a certain Part, but not the whole of the Salt, is here converted into Acid, by means of the Fire and Bole. In this Distillation, towards the End, a yellowish Matter, inclining to white, always fixes to the upper Part of the Receiver, and has a sweetish, styptic, saline Taste; and I have found this in great Plenty, when the Operation was performed with Brick-Dust instead of Bole; it seems to proceed from the Salt and fat Earth mixed together. The Salt obtained from the Caput Mortuum is highly commended by *Helmont* for the Preparation of *Butler's Stone*; and the Spirit is recommended for the same Purposes as that of the preceding Process, where the Particulars relating to this are already considered.

GLAUBER'S SAL MIRABILE.

Take the white, saline, fixed Salt remaining at the Bottom of the Retort, in the Preparation of *Glauber's Spirit of Sea-Salt*, to be got out by breaking the Glas; bruise it, melt it in a Crucible at the Fire, with Care to prevent any Coals falling in, and afterwards dilute it with common Water. Or else dissolve the Salt, as it remains in the Retort, by pouring hot Water to it; strain the Lixivium hot, evaporate it to a Pellicule, and set it in a quiet cold Place; it usually coagulates into a Mass like Ice, or if it remains somewhat fluid, it turns solid upon being poured into another Vessel. If the Salt be dissolved in six times its Quantity of hot Water, then thickened again, and set by in a large Glas, it shoots into beautiful Crystals, of a particular Figure, considerably large, that remain solid, and do not run in the Air.

R E M A R K S.

The famous Inventor of this Salt justly called by the Name of *Wonderful*, not only on account of its being new, but of the surprising Effects it produces. I know some Chymists who are fond of Systems, pretend that no more than a true *Tartarum Vitriolatum*, is here produced, which was long known before the Time of *Glauber*. But *Tartarum Vitriolatum* has not the Properties which are found in this Salt, either with respect to Figure, Taste, or any Thing else; for if this Salt be properly prepared, reduced to Powder, and mixed with thrice its Weight of Vinegar, Beer, Wine, or Water, and set apart, it freezes them. When melted in a Crucible, if a fourth Part of Antimony be thrown to it, by a Piece at a Time, it wonderfully resolves it, and has many other Effects, as to which *Glauber*, *Boyle*, *Becher* and *Stal* defective to be consulted; all of them Men of the utmost Penetration,

tration, in giving Light to the more abstruse Parts of Chymistry ; to whom we must also add the great *Homburg*. In Surgery this Salt is of excellent Use against Putrefactions and Gangrenes ; it is also of Use, when internally taken, by gently stimulating, resolving, purging, and promoting of Urine.

SEA-SALT REGENERATED.

Dilute four Ounces of Oil of Tartar per Deliquium, with thrice its Weight of fair Water ; put them into a tall and large Glass Body, with a narrow Mouth, and heat the Liquor strongly : Then, by Means of a Funnel let fall into it, by a Drop at a Time, *Glauber's* Spirit of Salt, or that prepared with Bole, a great Effervescence will be excited. When this is over, shake the Glass, and mix all well together ; then drop in more Spirit, and mix as before, till the Alkali be perfectly saturated with the Acid. Now let the Liquor rest, and gently pour it from the Fæces into a Filter ; evaporate to a Pellicule, set it in a cold quiet Place, and perfect Crystals of Sea-Salt will be obtained. Treat the remaining Liquor in the same Manner, after the first Crystallization is over, and this will afford the same Salt, which will be fixed in the Fire, and have all the other Properties of native Sea-Salt.

REMARKS.

The vegetable Alkali, which indifferently receives any Acid, is here determined by the Acid of Sea-Salt ; and being saturated therewith, assumes the Nature of that Salt.

OF THE SUBTILTY AND SPECIFIC VIRTUES OF THE SPIRIT OF SALT.

Common Salt is of the neutral Kind, and consists of an Acid and Alkali as is sufficiently evident from its artificial Composition, from Spirit of Salt, and Salt of Tartar mixed in a due Proportion to the Point of Saturation. But this Acid cannot be more commodiously disengaged from the common Salt, than by an Addition of Oil of Vitriol, which, when mixed in equal Quantity with it, not only excites a violent E-bullition, because the Acid of the Vitriol acts powerfully upon the alkaline Principle of the Salt, but also a thick, white, and highly penetrating Smoke ascends, which, when concentrated, affords an highly acid fuming Spirit, which must be kept in Glasses well closed with Glass Stoppers. If this Spirit is very strong, it becomes hot on the Affusion of Water, almost in the same Manner with Oil of Vitriol.

The Distillation of this Spirit with Oil of Vitriol, is most commodiously made from a Glass Cucurbit by an Alembic ; for by Reason of the violent Effervescence and Froth, the Distillation cannot be commodiously made from a Retort, because 'tis to be apprehended that the Froth may pass over. A proper Quantity of common Water is to be added, which assists the Ingress of the Acid of the Vitriol into the interior Parts of the common Salt, by which Means a larger Quantity of Spirit is obtained.

The Rectification may be made from the Retort ; thus a Spirit of a yellowish Green, which is its genuine Colour, is yielded, and the grosser Parts of the Acid of the Vitriol remain in the Bottom. This Spirit tinges the Skin with a Colour resembling that of Roses.

The highly penetrating and subtle Nature of this Acid is obvious from this, that in a gentle Heat, or even in *Balneo Mariæ*, it passes over the Helm of the Alembic, and when lodged in open Glasses, so exhales as soon to fill the whole Room ; and that the penetrating Nature of this acid Salt surpasses that of Nitre, I am induced to believe, because the acid of Salt has a freer Access into the Pores of Gold than that of Nitre, which dissolves all other Metals ; for without an Addition of common Salt, the firm Compages of Gold cannot be dissolved.

So great is the Subtily of the Acid of common Salt, that when taken internally, it diffuses its Operation and Efficacy to remote Parts, especially those of the membranous Kind. But it in a particular Manner exerts its Influence on the nervous and sensible Membranes of the Lungs, by stimulating and agitating which, it excites a gentle Cough ; for which Reason, the Acid of common Salt ought to be very cautiously used, without losing its Texture ; it, also, by its powerful Stimulus, penetrates to the urinary Passages ; for there is hardly a more efficacious Medicine for exciting a Discharge of Urine, than Spirit of common Salt.

Those who have Fontanels in their Bodies, and frequently use Spirit of Salt in Broths prepared with Flesh, perceive pungent Pains in their Fontanels. The great Subtily also of this Spirit, is the Reason, why by acting on the nervous Coat of the Stomach, it excites the Appetite far better than all other acid and mineral Spirits.

Strongly concentrated Spirit of common Salt has this peculiar to it, that it does not, like other corrosive and highly concentrated Acids, such as Oil of Vitriol, and my fuming Spirit, by the Addition of a sufficient Quantity of highly rectified Spirit of Wine, lose its acid Taste, and assume a sweet Taste and Smell. The strong Acid of common Salt remains entire in the Bottom of the Cucurbit ; for 'tis sufficiently known to Chymists, that Oil of Vitriol, after the Addition of a sufficient Quantity of highly rectified Spirit of Wine, at different Times, may, by Distillation, be converted into a very penetrating Spirit, of a grateful Taste and Smell.

Thus also my fuming Spirit, upon an Admixture of twelve Parts of highly rectified Spirit of Wine, becomes sweet, and assumes a grateful Taste and Smell, because by the oleous and sulphureous Parts of the Spirit of Wine, the acid Spicula are so corrected and sheathed up, as to assume a quite different Nature, Texture and Efficacy. But this is not found to happen in the Spirit of Salt, which rejects this Union of the oleous and phlogistic Spirit ; for it retains its Acidity entire, except that its thinner sulphureous Part being united with the inflammable Spirit, in some Measure changes its Smell, and renders it more grateful.

'Tis also peculiar to Spirit of Salt above that of Vitriol and Nitre, that it does not so quickly dissolve Filings of Steel, but leaves the *Lapis hæmatitis*, and the most subtle *Crocus mortis* entirely untouched ; whereas common Salt, or which is still better, Sal-ammoniac, acts more quickly and powerfully on chalybeate Minerals, the *Lapis hæmatites*, and Filings of Steel, and by dissolving them, converts them into a highly astringent Vitriol, provided they are intimately mixed in a Crucible, and kept on the Fire for a considerable Time, which neither happens with Vitriol nor Nitre.

No Acid so soon extracts the Sulphur, with which Iron is richly impregnated, as the Acid of common Salt ; for whether a Solution of Steel, with Spirit of Salt, is inspissated, or whether Sal-ammoniac, with Filings of Steel, is treated by a close Fire, a Vitriol is obtained of a yellowish Colour, an astringent Taste, a grateful Smell, and which is not capable of Crystallization, but melts away in the open Air ; and if duly dephlegmated Spirit of Wine is poured upon it, the sulphureous Part of the Steel, and the thinner Portion of Salt immediately enter it, and by this Means is prepared a Tincture of Steel, which is of a yellow Colour, a fragrant Smell, a subastringent Taste, and highly efficacious in restoring the Tone of the Parts ; for by this Means the sulphureous Substance of Steel, which is of great Use in Medicine, may be most commodiously separated.

'Tis, also, to be observed, that highly concentrated Spirit of Salt, when mixed with Oil of Vitriol, produces a greater Effervescence, than any other acid Spirit. *Hoffman. Obs. Phys. Chym. Lib. 2. Obs. 17.*

OF THE SOLUTION OF SALTS.

It has hitherto been received as an incontestable Maxim among Chymists, that phlogistic or inflammable Spirits are the most commodious Menstruums for oleous, resinous, and sulphureous Bodies, but not at all for Salts, whose Solution is obtained by aqueous Menstruums. This Doctrine seems to be confirmed by Experience, which convinces us, that Spirit of Wine highly rectified, or deprived of all its Phlegm, neither dissolves and imbibes neutral Salts, nor those of the fixed alkaline Kind, when poured upon them, but leaves them untouched. We shall therefore shew, that this Maxim is not so universal as it is generally thought, but that it has many Exceptions, in which it may be demonstrated to the Eye, that highly rectified Spirit of Wine does not reject Salts of all Kinds, but readily dissolves them, and is incorporated with them ; for as for fixed alkaline Salts, we observe, that in the Abstraction of highly rectified Spirit of Wine from Salt of Tartar, especially when frequently repeated, a large Quantity of this Salt is dissolved in the Spirit, which by this very Means becomes highly acrid, alkaline, and proper for the Dissolution of Oils ; for when I took ten Ounces of the Salt of Tartar, well calcin'd, and by a gentle Heat drew off two Quarts of highly rectified Spirit of Wine from them, I obtained a Spirit richly impregnated with the Salt of Tartar. But as the Salt of Tartar always separates a great deal of Humidity from the rectified Spirit of Wine, hence it assumes a liquid Form in the Bottom of the Cucurbit. This Humidity I abstracted by a proper Evaporation, and afterwards calcined the Salt in a Crucible, and upon examining the Weight, found that it had lost three Ounces, because only seven Ounces remained. I repeated this Experiment, and poured the same Spirit on the Salt of Tartar, to be abstracted by a gentle Heat, but had only half the Quantity drawn off ; and in the Cucurbit there remained two Liquors, one of which floating above the Liquor of the Salt of Tartar, was of a yellow Colour,

lour, of a highly acrid Taste, and full of an alkaline Salt. This is by Chymists called the Tincture of Tartar. The other, which was below it, was only a Solution of the Spirit of the Salt of Tartar, by Means of the Phlegm left. This, when dried and calcined, had its Weight considerably decreased.

From this Process 'tis sufficiently obvious, that tho' the Salt of Tartar sustains the Force of the Fire and Air, so as to have no Part of it exhaled, yet it may, by frequent Abstraction, by an inflammable Spirit, become not only volatile, but also capable of being resolved by such a Spirit.

'Tis, also, to be observed, that Salt of Tartar, however strongly calcined, always separates, by Digestion, and Abstraction, from the highest rectified Spirit of Wine, a Portion of Phlegm, in which it dissolves; a certain Proof that the phlogistic or vinous Spirit is nothing but the Oil of those Things which have undergone a Fermentation, resolved into Phlegm, by the intestine fermentative Motion. This I shall afterwards evince by other Experiments.

The yellow Colour of the Tincture of Tartar is owing to no other Cause, than that the Oil of the Spirit of Wine, intimately mixed with the Salt of Tartar, is capable of tinging it with that Colour, which may be confirmed by many Experiments, especially in the Elaboration of the acrid Tincture of Antimony.

Not only fixed alkaline Salts may be rendered soluble, in highly rectified Spirit of Wine, but I can also prove, from various Experiments, that there are neutral Salts, which are more expeditiously dissolved in highly rectified Spirit of Wine, than any fixed alkaline Salt; so that six Parts of the Spirit are capable of receiving and retaining in their Pores one Part of the Salt.

These are two artificial Salts; the one is prepared thus: We take any given Quantity of pure and dry volatile Salt of Sal Ammoniac in a Glass, into which we gently drop Aqua Fortis, or Spirit of Nitre, till the Point of Saturation is found, by which Means the neutral Nature of this Salt ought to be accurately investigated. This Liquor, which is of a nitrous and acrid Taste, we evaporate in a warm Furnace, by which Means we obtain a highly white and dry Salt, of a nitrous and acrid Taste, which, when thrown upon the Coals, flames, and leaves only very few terrestrial Parts. The other of these Salts is prepared thus: We take volatile and dry Salt of Sal Ammoniac; this we saturate with Spirit of Salt instead of Aqua Fortis, by which Means there is produced a third Salt, exactly like Sal-Ammoniac, and which is quickly united with rectified Spirit of Wine.

But when this same volatile Salt is converted into one of a third Kind, like Sal-Ammoniac, with Spirit, or Oil of Vitriol, it is by no Means susceptible of an Union with the Spirit of Wine, but flies its Embraces. For which Reason, if rectified Spirit of Wine is poured upon a Solution of this Salt made with common Water, the volatile Salt forthwith subsides, which does not at all happen, if this Spirit is poured upon the before-mentioned Salts when dissolved; for the Solutions of these are capable of an intimate Union with Alcohol of Wine.

The Reason of this Difference seems to be, that the Spirit of Vitriol is a highly fixed Acid, whereas the Spirit distilled from Nitre and common Salt is of a highly volatile and subtile Nature, for which Reason, there is a close Union between these Spirits and this volatile Salt; but its Union is less with a more fixed Acid. For the same Reason, if the Salt prepared of the Oil of Vitriol and the volatile Salt of Sal-Ammoniac is by a brisk Fire urged in a Glass Cucurbit, the volatile Salt flies off, and the Acid of the Vitriol is left; which, however, does not happen with the two forementioned Salts, which, when treated with a brisk Fire, fly totally off in the Air, and leave no Marks of themselves.

These neutral Salts, capable of a Solution in Alcohol of Wine, are of singular Efficacy, both in Medicine and Chymistry; for Nitre thus dissolved in my Bezoardic Spirit, my anodyne or camphorated Liquor, is an excellent Medicine for preventing and discussing internal Inflammations, and for duly expelling exanthematous Disorders.

'Tis also well known, that Nitre is excellent for discussing erysipelaceous Inflammations of the Skin, when mixed with camphorated Spirit of Wine, which is by itself too hot and burning. But as common Nitre is incapable of such an Union, hence the End may be most commodiously obtained by my volatile artificial Nitre.

As for the other Ammoniacal Salt dissolved in Spirit of Wine, it may be rendered a Stomachic Medicine of singular Efficacy, when 'tis invigorated by the Addition of a proper Quantity of the Spirit of Salt; for twenty or thirty Drops of it thus prepared, and exhibited in a proper Vehicle, are excellent for restoring a languid Appetite, resolving those Crudities which are the Causes of various Disorders, and may be properly used as a Succedaneum to the aperitive Tincture of Meibius, whose Virtues it in some Measure surpasses;

for 'tis sufficiently known, that this Physician got a great deal of Money Means of his aperitive Tincture, which he prepared of rectified Spirit of Salt, somewhat corrected by the Addition of a proper Quantity of Salt of Tartar; for which Reason, its Virtues are derived partly from the subtile Spirit of the acid Salt, and partly from the neutral Salt produced from the Spirit of Salt and the Salt of Tartar. But since we, instead of Salt of Tartar, take the volatile Salt of Sal-Ammoniac, and since the Virtues of this Salt are far more efficacious in correcting the Disorders of the Stomach than those of common Salt, hence it follows that the Tincture prepared from it must be also more efficacious. But Meibius, in my Opinion, gave the Name of Tincture to this Liquor, because he tinged it with the Flowers of Daisies or Roses, in order the better to conceal the Secret.

That there are in Nature Salts of very different Kinds, is sufficiently known, since some are natural, and others artificial, some acid, and others alkaline, whilst others are of the neutral Kind. 'Tis also known, that the Effects of these are very different, and that they are all capable of being dissolved in Water, which is, as it were, their specific Menstruum; but at the same time, 'tis to be doubted whether many know that their Solution is very far from being equal, but widely different, since some are sooner and more quickly dissolved, and enter the Interstices of Water in a much larger Quantity, whilst others are dissolved slowly and with Difficulty, and are received into Water in smaller Quantities. Concerning this I made the following Experiments.

One medicinal Pint of Water quickly dissolves four Ounces and an half of common Salt, and one Pint common Measure dissolves six Ounces of it.

A medicinal Pint of Water, by sufficient Agitation, receives six Drams of Nitre, and the same Quantity of Vitriol is dissolved by the like Quantity of River Water.

Only two Ounces of Alum can be dissolved in one Medicinal Pint of Water, and, which is more surprizing, the same Quantity of the *Arcanum Duplicatum* can only be dissolved in the like Quantity of Water.

Among the Salts which are most easily dissolved, and with which the whole Water is, as it were, saturated, the most considerable is the artificial purgative *Epsom* Salt, which is quickly dissolved by an equal Quantity of Water; so that one medicinal Pint of River Water commodiously receives twelve Ounces of this Salt.

The Salt of Tartar, which is alkaline, is also easily dissolved, since one Pint of Water is capable of receiving almost nine Ounces of it. Tho' these Experiments may at first Sight appear trifling, yet they are of singular Importance in Chymistry, since from them we learn,

1^{mo}, How much Water is requisite to resolve and deplete these impure Salts.

2^{do}, From a Solution of common Salt, we learn, that there can be no saline Waters, sixteen Ounces of which can possibly contain more than six Ounces of Salt.

3^{tio}, These Experiments, in a great Measure account for the Separation of Salts, when mixed with Waters of various Kinds. Thus, for Instance, if Alum is added to a Solution of Salt, by previous Boiling and Inspissation, the Alum is first separated in the Form of Crystals in the aqueous Menstruum, but the common Salt is left, which by continuing the Inspissation, may also at last be obtained in the Form of Crystals. The Reason of this is, because the Alum requires a greater Space in order to be contained in the Water than the common Salt. Hence this Space being lessened, it is forced to a Separation, and quits the Pores of the Water. Besides, 'tis known that common Salt almost always adheres to Nitre, but this Salt ought carefully to be separated from it, because it not only hinders its Inflammability, but resists the Separation of a laudable and good Aqua Fortis; for when a large Quantity of Salt adheres to the Nitre, an Aqua Regia is rather obtained, which dissolves Gold and not Silver. The Method of Separation is this. The Nitre is dissolved in a due Quantity of Water, and after gentle Boiling, the Vessel exposed to a moderately cold Air, by which Means the Nitre descends in form of pyramidal Crystals, whilst none of the Salt is precipitated. Afterwards, upon Inspissation and Crystallization, the Nitre is separated, and the common Salt remains in the rest of the Liquor. The Reason of this is to be deduced from the more easy Solution and Retention of the common Salt in the Water than of the Nitre.

'Tis sufficiently known that the *Arcanum Duplicatum* is prepared of Nitre and Vitriol, if these two Salts are duly calcined; nor do they however at all Times so closely unite with each other, as to form the *Sal Duplicatum*, but the vitriolic and nitrous Parts often remain separate. If therefore we would separate from these two Salts the *Arcanum Duplicatum*, which is a neutral Salt, the Lixivium duly boiled, must be subjected to Crystallization, by which Means the *Arcanum Duplicatum* is precipitated, whilst the

Vitriol

Vitriol and Nitre remain in the Lixivium; for from what has already been said, 'tis obvious that one medicinal Pint of Water can hardly contain an Ounce of this Salt.

4to, If we intend to separate Salts of different Kinds from each other, this must be obtained by a Solution with Water: For those Salts which are copiously conveyed into the Pores of the Water are most speedily dissolved, whereas those which with Difficulty enter the Pores of the Water, require a longer Time for their Solution. Thus, for Instance, if we intend to separate the Arcanum Duplicatum, from another neutral Salt, such as Nitre or Vitriol; or Sal Ammoniac from common Salt or Nitre, we must pour common Water upon them, which imbibes the common Salt or Nitre, and leaves the Arcanum Duplicatum in the Bottom. In like manner, if we intend to separate the Arcanum Duplicatum, or vitriolated Tartar, from an alkaline Salt or Pot-ash, this End must be obtained by an Effusion of Water, which quickly dissolves the alkaline Salt, and leaves the Neutral. Thus also Alum is separated from Vitriol; for the latter is more quickly dissolved than the former.

5to, Since there is no Phenomenon in Nature without its adequate Cause, the Reason why some Salts are more easily dissolved than others seems to be placed in the Water itself. The Salts which are most easily dissolved, seem to consist of highly subtile, much divided, and small Particles, whereas those which are with Difficulty dissolved consist of gross, coarse, firmly cohering, and consequently fixed terrestrial Parts; for the highly subtile and minute Particles are capable of entering the minute Pores and Interstices of the Water, from which the grosser Particles are excluded. From what has been said 'tis obvious that Epsom Salt is of a highly subtile Nature, because an Ounce of it is received by an Ounce of Water, which is very surprising, and seems hitherto to have been adverted to by none. Hence it also happens, that highly rectified Spirit of Wine, when poured upon a saturated Solution of this Kind, forthwith coagulates it into a firm and stable Mass, like Ice, because the rectified Spirit of Wine has an easy Access into the Water. Hence 'tis necessary that the solid Particles of the Salt, which, when joined together, form such a firm Mass, should be suddenly forced from the Pores of the Water. This Subtlety of Epsom Salt is owing to this, that there is a small Quantity of fixed Earth in it; for 'tis remarkable that this Salt, when mixed with Powder of Charcoal, and exposed to the Fire in a Crucible, is totally evaporated, and fills the Room with a sulphureous Smoke. This Salt also, in consequence of its Subtlety, is preferable to others for purging, because it insinuates itself more deeply into the intestinal Coats than any other Salt, such as the Arcanum Duplicatum, Nitre, or common Salt. And because common Salt is more subtile than Nitre, it is also more purgative. But a Solution of Alum is not to be procured without great Difficulty; for which Reason, on account of the large Quantity of Earth it contains, it braces up the Pores, and is of a more astringent Quality than Vitriol, because it contains a greater Quantity of Earth, as is obvious from Calcination, in which the Alum affords a greater Quantity of Caput mortuum than the Vitriol. Common Salt is, besides its Salubrity, excellently calculated for preserving Fleashes, and preventing Putrefaction, because it enters the Pores of the Flesh to be preserved, and extracts its Humidity, which cannot be so speedily done by other Salts: And on account of the Subtlety and easy Solution of Epsom Salt, I am apt to think that Bodies might be better preserved by it than by any other Salts. *Hoffman. Observat. Phys. Chym. Lib. 2. Obs. 5. & 6.*

OF THE CAUSTIC QUALITIES OF SALTS.

'That the caustic and virulent Quality of Salts consists in the great Subtlety of their Parts, may at first appear a Paradox, tho' the Truth of the Observation is sufficiently evinced from the following Considerations. 'Tis an important Circumstance, both in Natural Philosophy and Chymistry, to know the various and surprizing Natures of the Mixtures of Bodies, since from these arise the various Phenomena and different Operations of these Bodies. Thus, for Instance, tho' the Pyrmont Mineral Waters far exceed all others, in their penetrating and saline Taste, yet in twenty four Hours, if they are exposed to the free Air in a large Vessel, they lose all their Taste and Efficacy, and only resemble common Water, since all the saline, spirituous, and medicinal Parts are evaporated in the Air. 'Tis also to be observed, that if Pyrmont Water is subjected to Distillation in a close Vessel, the Vapour and Water distilled retain no Taste, nor is any Thing of a saline or vitriolic Nature to be found either in the Caput Mortuum or in the Water itself.

It may seem surprizing, that so efficacious a Salt should thus vanish, and be evaporated. But our Surprize will cease, when we know from Chymistry and Natural Philosophy, that the

most acrid Salts, and even mild alkaline, and fixed acid Salts, when treated in the like Manner, are found to consist of a subtile, volatile and insipid Vapour. Thus quick Lime, by an Affusion of Water, acquires a highly acrid Taste, but by Boiling loses all its acrid Taste and Efficacy. This same quick Lime, with an Addition of Pot-ash, when dissolved and boiled in Water, and then inspissated, affords a Caustic so powerful, as by single Contact to corrode Leather, Paper, Cloths, and other Substances, and convert them into a kind of Mucilage. Notwithstanding this, if a few Ounces of this Salt, dissolved in Water, are boiled and, inspissated, and after the Addition of fresh Water, the Boiling and Inspissation frequently repeated, there at last remains a fourth Part of insipid Earth. The same happens to all fixed alkaline Salts, and to common Salt, which, if they are dissolved, boiled, coagulated, calcined, and afterwards dissolved and coagulated several Times, afford nothing but an insipid Earth.

But the Curious are not equally apprised of another Thing, which happens with respect to the Boiling of Salts, which is, if the Water, which is a Vehicle for the Elements and Seeds of the Salt, is not boiled by a gentle and gradually decreasing, but by a violent Fire, a fourth Part of the Salt is lost, and a great Part of it dissipated in the Air. Nor is it to be doubted but the like happens to vitriolated Tartar, and the Arcanum Duplicatum, if they are boiled by too strong a Fire.

'Tis also observable, that an acid Corrosive, if duly managed, degenerates into a similar insipid Matter. Thus Oil of Vitriol, which is a highly fixed and powerful Caustic, degenerates into a black and insipid Earth, and a somewhat acid Phlegm, of a sulphureous Smell. Now that the Oil of Vitriol is a highly concentrated and fixed Acid, is a Thing too well known to stand in need of a Demonstration; yet if this Oil is drawn from sulphureous Substances, whether of the vegetable or animal Kind, such as Opium, Orpiment and Antimony, this highly fixed and strong Acid is converted into an evaporable Smoke, of a highly volatile Nature, almost without any Degree of Acidity, and only leaves an inconsiderable Remainder of Acid in the Caput Mortuum. From these Experiments 'tis obvious, that this fixed Acid is compounded of very active and subtile Parts, which active and subtile Nature they immediately assume upon the Admixture of a small Quantity of any pinguious and sulphureous Body.

My Spirit, which, when poured into distilled Oils, produces a Flame, is so highly corrosive, as in a short Time to attack, corrode, and dissolve the most solid Metals, yet it is totally evaporated in the Air, and resolved into Smoke, which can hardly be contained in the closest Vessels; a sure Proof that it consists of highly subtile Parts.

Hence we can easily account for Glauber's Experiment, which is, that common Salt, by an Admixture of a due Quantity of Oil of Vitriol, is dissolved into a highly subtile Vapour, which fills the whole Room. But if this Smoke is concentrated and collected, it is an highly acid and corrosive Spirit.

If we consider Vegetables, we find large Numbers of them composed of highly subtile Parts, closely cohering with each other, whilst at the same Time they are possessed of singular Efficacy. This is sufficiently obvious from drastic Purgatives and Emetics, which exert their Efficacy by a highly subtile, acrid, and caustic Salt, such as White Hellebore and Asarabacca, which are possessed of a very drastic, purgative and emetic Quality, yet these, when infused in Water, and boiled for a considerable Time, lose all their drastic Quality. Tobacco is also a drastic Purgative and Emetic, and works in a very virulent Manner on the human Body; yet if it is boiled in a sufficient Quantity of Water, its drastic Quality is lost, and an Extract obtained from it, highly extol'd by some Physicians for its Efficacy in resolving viscid Humours, which so far injure Expectoration, as to threaten a Suffocation. Aloes, tho' not ranked among the Class of drastic Purgatives, yet purges so strong, and throws the Mass of Blood into so violent Comotions, that a few Grains of it are sufficient for a Dose; but if it is dissolved in River Water, and boil'd for a considerable Time, its cathartic Quality is so much impaired, that it is not in the least purgative, unless exhibited in a very large Dose. Scammony and Coloquintida may in like Manner be deprived of their purgative Quality by Boiling.

It may seem somewhat more difficult to deprive mineral Substances of their drastic, emetic and purgative Quality by Boiling. But the Truth of this is confirmed by the following Experiment. When in preparing emetic Tartar from Crocus Metallorum and Cream of Tartar, the Infusion is boiled long, we observe, that by this Means the Efficacy of the Medicine is greatly impaired, so that ten Grains of it must be exhibited for a Dose, whereas otherwise two or three are sufficient.

All these Experiments sufficiently evince, that not only the Acrimony of Salts, but also the virulent and drastic Qualities of other Bodies, are to be ascribed to their highly subtile and moveable

moveable Parts, which, when closely joined, exert a corrosive and acrid Virtue, which the Air, Water, and Heat destroy, by disjoining them; nor is it surprising that Salts consist of highly subtile Parts, because the more subtile any Body is, the quicker Motion it receives and propagates, as is observable in the Æther, the Air and Water.

But the Corrosion and Dissolution of Bodies by Salts are produced by the intense Motion of their Parts, as is obvious from their Effects. The more concentrated therefore the moving Force is, the more conspicuous and noble is the Effect. Thus the fuming concentrated Spirit corrodes more powerfully than the Spirit of Salt, which again is more corrosive than Oil of Vitriol, because the Spirit of Nitre consists of more subtile Parts than the Spirit of Salt, and the Spirit of Salt of more subtile Parts than Oil of Vitriol.

From all these Considerations, we may conclude, that all Salts are made up of a subtile, penetrating, and, as it were, ætherial Matter, and that their Parts, when joined with the Earth, as a Kind of Cement, are of a highly acrid and corrosive Quality, but when disjoined and separated, totally destitute of Virtue and Efficacy. This may be excellently illustrated by a Burning-glass; for, as by its Means the Rays of Light, when much concentrated, produce an intense Heat, so when they are more diffused, they operate in a proportionably more languid and faint Manner. *Hoffman. Obs. Phys. Chym. Lib. 2. Obs. 15.*

SAL ACIDUM. An acid Salt. See ACIDA.

SAL ALEMBROT. See ALEMBROT. *Schreder* describes the Preparation of a *Sal Alembrot*, thus:

Take of common Salt, Sal Gem, and alkaline Salt, each an Ounce; make a Lixivium with the Juices of Mint, and Clove-Gilly-Flowers each two Ounces, and two Pints of Fountain Water; filter and coagulate.

SAL ALCALI, or ALKALI. See ALCALI.

SAL AMMONIACUM. See AMMONIACUM.

SAL ANATRON. See NITRUM.

SAL ANIMALIUM. Animal Salt. See ALCALI.

SAL CATHARTICUM AMARUM. The bitter purging Salt, commonly called *Epsom Sal*. This was first made by Dr. Grew, by evaporating the *Epsom Waters*. Some Years after, several other bitter purging Springs were found in different Counties, and Salts in small Quantities were boiled up from them, but from no Place, nor all the Places put together, in such large Quantities, as from the Springs on one Side of *Shooter's Hill* in *Kent*, about the Year 1700, which were then in the Possession of those two ingenious Chymists, Mr. George and Mr. Francis Moul, and where they made such large Apparatus for evaporating the Water, that they have sometimes boiled down 200 Barrels in a Week, from which, in a dry Season, and when the Land Waters did not get into their Drains, they have obtained 224 Pounds of Salt. After these Works had gone on some time, Dr. Høy found out a more expeditious Way of making a purging Salt, so nearly resembling that from the purging Springs, in all its Properties, that it soon passed on the World for the other, and continued so to do. The great Consumption of these Salts (which then went only by the Name of *Epsom Salts*) as well at home as abroad, engaged some of our Physicians (many Years before M. Bolduc took Notice of it) to suspect, that even what was made at *Shooter's Hill* was spurious, and received an Addition of something to increase the Quantity. But these Suspicions, I dare positively affirm, were entirely groundless, as to the Salts made there, and readily believe the same of any other Place, where the Spring Waters were boiled down for Salt. But upon a Consideration, that there were greater Quantities of this Salt consumed than all the Places where the Waters were boiled could produce, which was the real Fact at that Time of Day, there was sufficient Room to suspect that some of them were not genuine, as appeared to be true some time after. For the Secret, which was then in a few Hands, of making these Salts cheap, gave those who had it an Opportunity of underselling those who made it from the Waters, and, in a Year or two, rendered them incapable of making it to any Advantage: So that the Work on *Shooter's Hill* was thrown up; and I believe there has not been 100 Pound of Salt made from the Waters since that Time in any Part of the Kingdom.

Some Time before this Work at *Shooter's Hill* was broke up, some Pains were taken to discover the Secret those had, who sold the Salt so cheap; and upon examining the several Salts, that were sold about Town, those disposed of by Mr. G. and F. Moul, were certainly genuine, and were therefore a proper Standard to judge of the rest by. But from all the Experiments then made, there could no material Difference be found between the Salt made from the Waters, and that made by them who were in the Secret. There was indeed a

Salt sold by some, which, in the Course of those Trials, was found to be a *Sal mirabile*, made from the *Oleum Vitrioli* and common Salt, but shot into such small Crystals, as not at first Sight to be distinguished from the other. Necessity being Mother of Invention, it was not long before it was discovered, and the Experiment was tried at the Lady *Carrington's* Salt-Works near *Portsmouth*; where it was found the same Thing could be done, as at another Work not far from it, and in which Dr. Høy had been concerned. It was some Years after this Salt had been made at *Portsmouth*, before the Salt-Makers at *Lemington* attempted, or indeed knew the Method of making it, who are now the greatest Traders in it, and have sent several Ton in a Year to *London*, besides what has been directly exported from thence.

I remember it to have been the Opinion of the Proprietors of the Salterns near *Portsmouth*, that this purging Salt could not be made at any other Salt-Works except theirs, and that the bitter Taste in the Salt was communicated from the Earth to the Sea-Water, whilst it stood exposed in their Sun-Pans. But Time has proved this Opinion false; for besides what has been said of its being made at *Lemington*, it was about four or five Years ago begun to be made near *Newcastle*, where it is still continued to be made, and doubtless may be made at any Salt-Works, where the common Salt is made from Sea-Water by Evaporation. Whether any Thing of this Kind has been attempted at any of our Inland Salt-Springs, either in *Cheeshire* or *Worcestershire*, I am not yet satisfied. There is some Difference in the making the common Salt in *Hampshire*, from that about *Newcastle*: At the first of these Places, in the Beginning of the Summer, at Spring Tides, or at New and Full Moon, the Sea-Water is let into their feeding Ponds, which are their Reservoirs for their Summer's Working, and from hence is conveyed into small square Pans, and again, after some time, from these it is conveyed into larger Pans, or Beds, which they call Brine or Sun Pans, all which are made of Sea-mud and Earth. In these last Pans, or Beds, it lies exposed to the Sun and Wind, in order to exhale the weakest Waters; and it is in these Beds, if the Weather prove very favourable, that they can make as good Bay Salt as any we have from *France*; and at such a Time they never bring their Brine to the Boilers. But if the Weather is not hot enough for that Purpose, their Brine is exposed so long in these Pans, till it becomes of such a Strength as to support their Eggs made of Glass or Wax, to a certain Height above the Surface of the Brine, which from thence is conveyed into large Stone Cisterns, and then into Boiling Pans made of Iron, where it is-boiled down (after having been frequently scummed) to a Sea-Salt. 'Tis observable, that whilst the Brine is boiling, there precipitates a hard crusty Matter, which is partly taken out by Vessels placed in proper Parts of the Pan for that Purpose, and Part of it fixed on the Bottom of the Pan so hard, as to be afterwards dug off, and this the Workmen call *Scratch*, and is what Dr. Collins, concerning the Sea-Water boiled at *Shields*, calls a Stone Powder. When the Operation for the Sea-Salt is finished, it is taken out hot, and put into wooden Troughs, with Holes at the Bottom, through which runs the superfluous Liquor: Under these Troughs are set other Vessels (with Sticks fixed in them in a perpendicular Posture) to receive what runs through. In these Vessels the Liquor is suffered to continue some time, and according to the Quantity of Sea-Salt still left in it, will crystallize to the Sticks, something like Sugar-candy, but in much larger Shoots; and this they call Cat-Salt, or Salt-Cats, and it holds some Share of the bitter Salt. When this Salt is broken small, or rather powdered, it is so white, that some Gentlemen choose it for their Tables; but the greatest Consumption of it is among the Cake Soap-boilers. The Liquor that will not shoot to these Sticks, is what, at these Works, they call the *Bittern*, fit for making the *Sal Catharticum*.

Near *Newcastle*, their Method is to receive the Sea-Water into their Reservoirs at High Water, at any Time of the Moon, if there be no Fresh in the River, occasioned by Rain in the higher Country; and from these Reservoirs, without exposing of it in Beds, as at *Lemington*, they pump it into their Boiling-Pans, where evaporating it almost to a Pellicle, they fill it up again eight or nine Times, and then waste it with a gentle Heat for the common or Sea-Salt. The Liquor that runs from this Salt, when taken out, and put into proper Vessels, is what they call the *Bittern*, which, if it stands some Time in those Vessels, a Salt will shoot and crystallize to the Sides, in Taste pretty much like Sea-Salt, but with a Share of Bitterness, and seems to answer to the Cat-Salt of the *Lemington* Works, and very probably would shoot after the same Manner, if they made Use of the same Apparatus.

I could not but mention this general and loose Account of making the common Salt, as necessary to introduce the Liquor called *Bittern*, which, before Dr. Høy found out an Use for it, was always flung away; being so different in its Properties from

from the Brine made use of to produce the Sea-Salt, that it would not boil up into the Operator, to determine the Time when to take out the Sea-Salt from the Pans, before the Bittern incorporated with it, which would otherwise spoil the whole Making.

The Bittern at *Lemington* (as observed before) not shooting to the Sticks, is carried by Channels into Pits made tight with Clay, where it stands for some Months, and there will shoot again. What Liquor remains is boiled down, till it is observed to be in a Disposition to crystallize, and then is conveyed into wooden Coolers lined with Lead. The Liquor, which will not shoot there, is boiled down after the same Manner, in order for another Crystallization. By this Time the Liquor seems to have altered its Property, and becomes of a very pungent biting Taste, and, if boiled down, will not longer shoot into Crystals, as before, but precipitates, during the Boiling, a small grained Salt; and if you should continue to boil down the Liquor, separated from this Salt, each Quantity of Salt thus produced will be still more pungent than the other. If you boil down the whole Quantity of this Liquor, it will produce a Salt, which, if exposed to the Air, will run *per Deliquium*. The Liquor that produces this Salt is always flung away wherever the *Sal Catharticum* is made.

This is what at present I can give no other Name to, than a third Salt produced from the Sea-Water, differing, in some Respects, as much from the other two, as they differ from one another.

To return to the several Crystallizations, such as mentioned to be shot from the Bittern, these will be of different Sizes, as to their Figures, and hold some Share of the third Salt, but now taken Notice of, which makes them subject to give and dissolve; nor is their Taste come yet to that simple Bitter of the pure Salt. These therefore are either separately, or altogether, to be flung into a Copper, with as much common Water as is sufficient to dissolve them, and allow of a gentle Evaporation, till they are again ready to be poured into the Coolers, in order for Crystallization. This generally proves to be the pure *Sal Catharticum*, thoroughly freed (as far as the Experiment I have tried can be convincing) from either a Sea-Salt, or the third Salt. The Liquor decanted from this Shooting may be boiled down again, in order for a second Shooting, and after that a third; but as the Liquors from these Shootings are boiled away more or less, so you will sooner or later meet with the pungent Liquor, which contains the third Salt, as you did in the former Shootings from the Bittern, from which the pure *Sal Catharticum* is as necessarily required to be freed as from the common Salt; a Proof of which cannot be better determined than by one of the Experiments to be taken Notice of hereafter, *viz.* that with the *Oleum Vitrioli*, which will certainly ferment with this Salt, if the Sea-Salt has not been well separated from it, or if it still holds some of the third Salt. And when any of the Crystallizations will not stand the Test of this Experiment, they ought to be dissolved and shot again, as before, by which Means the pure Salt is to be obtained. I do not mention this as a Trial made Use of at the Salt-Works, but what I have by Experience found to be true. And the same Experiment will serve to distinguish a *Sal mirabile* made at these Works, from that made with Oil of Vitriol and common Salt. The Account they give of it is this: They take any Quantity of coarser grained Crystals boiled from the Bittern, which, when dissolved and evaporated, more than they would otherwise do for making the *Sal Catharticum*, they throw into a Wooden Bowl, with some Oil of Vitriol, where it stands for ten Days, and shoots into large Crystals, transparent, and like the *Sal mirabile*. But as this Salt, by this Method, is not sufficiently satiated with the Oil of Vitriol, (if they use any) so it is easily discovered by the Oil of Vitriol, which will readily ferment with it; whereas it has no Effect on the other *Sal mirabile* made as above.

By the Assistance of Robert Cay, Esquire, at *Newcastle*, I have received the several Shootings of Salts from their Bittern, as also some of the Bittern itself; from which I have obtained a pure *Sal Catharticum*, as also the like Kind of third Salt, as mentioned from the *Lemington* Bittern. The Method I took for doing it is agreeable to that I have already mentioned, and many Years ago tried at the Salt-Works near *Portsmouth*. It is by Mr. Cay that I am informed they sometimes boil their Bittern, without letting it stand any Time to shoot of itself. The Difference is not very material.

If this Account be intelligible, what the *Sal Catharticum* is, will no longer be a Mystery, and the next Thing worth the enquiring into will be, whether this Salt deserves the Reflections that have discouraged the Prescription of it? And why it may not pass for a Salt as excellent in its Kind, and be of the same Nature, and have the same Properties, as that produced from the *Epsom*, or any other bitter purging Springs? Dr. Grew, in his Treatise, *de Natura Salis Cathart. Amari*,

Cap. 2. says, that, in the Evaporation of any of the bitter purging Waters, they yield a Cream at Top, as also a Sediment, both together weighing six, eight, or ten Drams, from a Gallon of Water; and that the lesser Part of this Sediment is, in Substance, the same with the Cremor; the rest is all Salt, but consists of two Sorts, one a muriatic Salt, the which is proper or peculiar to these Waters. In the *Epsom* Water, the muriatic Salt is about a twentieth Part of the saline Mixture; in the *Dulwich* it is in greater Proportion, and the same in several others; it is both in its acrimonious Taste, and Figure of its Crystals, not unlike to common Salt. The other Salt is that which he says is particular or proper to the purging Waters, and is made by Evaporation and Crystallization. In this Preparation, first the earthy or plaistery Part is to be separated, next the muriatic Salt, and lastly a brown and dark Liquor from the proper Salt of the Waters. And in the fourth Chapter of the same Part, having shewn the Difference of the Figure betwixt the Crystals of this Salt and those of Alum, he goes on, Neither is there any better Ground to account the purging Salt a Species of common Salt, from which being perfectly freed, it differs as much in Taste as from Alum. And in the same Chapter, he says it will appear, the bitter purging Salt, altho' it hath some Qualities in common with other Salts, yet is truly, or specifically different from them all. Thus far Dr. Grew.

Now I cannot see any thing in this Account, but what will, considering all things, very well agree with the Purging Salt from the Sea-Water: For, first, there is an earthy or plaistery Part contained in these Waters, and this must be separated. The very same is in the Sea-Water, and is precipitated in the boiling them down, as has been observed, and by the Operators is called *Scratch*. Next there is a muriatic Salt allowed to be in these Waters; in some more, in some less; and this is also to be separated. The very same is done from the Sea-Water, tho' in a vastly larger Proportion. And lastly, there is a black and dark Liquor to be separated. Tho' this is but an obscure Way which the Doctor makes use of to express himself, it cannot be better explained than by what has been found to be fact in boiling down the Waters at *Shooter's Hill*: That after several Shootings of Salts, by repeating the Boilings of the Waters, there would at last remain a Liquor of a deep brown Colour, which would no longer yield a crystallized Salt; but if boiled up dry, would afford a Salt of the same kind with the third Salt already mentioned. And this explaining Dr. Grew's black and dark Liquor, helps at the same time to prove, in this Article too, that the Sea-Water affords the same kind of third Salt. I have tried several of the Experiments mentioned by the Doctor, by which he distinguishes his Salt from other Salts. Such as not affecting the Colour of Syrup of Violets; Curdling of Milk when boiled; in the Figure of its Crystals; in its easy Dissolution in the same Quantity of Water; in its coagulating with the Oil of Tartar per Deliquium, in its Calcination; and in the Bitterness of its Taste, as well before as after Calcination, &c. and find this Salt thus separated from the Sea-Water answer to all the Trials. Some few Experiments, that the Doctor has not taken notice of, I shall here subjoin, and then leave the whole to the Opinion of better Judges, whether there is any specifical Difference between those two Salts.

In order to have a Standard for these Experiments, I purposely got Mr. Hyet, Apothecary at *Epsom*, (whose Fidelity I could depend on) to boil me down some of their Waters; which he did from the Well in the Town, and sent me a sufficient Quantity of the Salts, to answer the Purpose I wanted them for. I procured, also, some of the first Salts from the *Lemington* Bittern: These do not hold so much of what I have already distinguished by the Name of the third Salt, as I find the *Newcastle* Salts do. This *Lemington* Salt, I (for Distinction-sake) call the first *Lemington* Salt. Part of this I dissolved, and shot into pure *Sal Catharticum*, being freed as well from the Sea-Salt, as the third Salt; and this I call the second *Lemington* Salt. I procured, also, from *Newcastle* the first Salt shot from their Bittern, which I call the first *Newcastle* Salt. Part of these I dissolved and shot, and obtained a pure *Sal Catharticum*; and this is what I call the second *Newcastle* Salt. I am obliged to make use of the *Sal Mirabile*, made from Oil of Vitriol, and common Salt, that having been taken for the *Sal Catharticum*, as also common Salt, that having been represented as the principal Substance of the *Sal Catharticum*.

I took half an Ounce of each of these Salts, and dissolved them in about two Ounces of Water to each half Ounce of Salt. A small Quantity of each Dissolution I poured into as many Glasses, and dropped into them all some Butter of Antimony. The Precipitation that followed, seemed to be alike in them all; and upon dropping a little Oil of Vitriol into each, what was precipitated being more powerfully attracted by the Oil, the several Liquors became clear. These are the

two only Experiments in which I found the Consequences so much alike in them all.

In the following Experiments, the *Sal Mirabile* is sufficiently distinguished from all the rest. Slices of Gall cut into these several Solutions have no manner of Effect upon any, except that of the *Sal Mirabile*, which is soon tinged of the Colour of Sack, or rather deeper. Spirit of Sal Ammoniac, with Tartar dropped into the several Solutions, turns them all milky, except that of the *Sal Mirabile*, which keeps its Transparency. The Spirit of Sal Ammoniac with Lime, the Oil of Tartar per Deliquium, the Tincture of Cochineal prepared with Spirits of Wine do every one, used after the same manner, sufficiently distinguish the *Sal Mirabile* from all the rest.

In the following Experiments, the *Epsom* Salt, the second *Lemington* Salt, and second *Newcastle* Salt, agree together, and differ from the common Salt, the first *Lemington* Salt, and the first *Newcastle* Salt. In the several Solutions I dropped a Solution of Silver in Aqua Fortis, from which followed these Consequences. The Solutions of the *Epsom* Salt, second *Lemington* Salt, and second *Newcastle* Salt, became equally milky, before the Precipitation. The Solution of the Sea-Salt, and first *Newcastle* Salt, let the Precipitation pass without receiving any milky Tinge. The first *Lemington* Salt, as holding less of the third Salt than the first *Newcastle* did, took a little milky Tinge. The Precipitation fell nimbly through the Solution of the *Sal Mirabile*, leaving it milky.

In the Condition these were in, I poured some Oil of Tartar per Deliquium to each of them; on which, after some time, a blueish Scum arose on the Surfaces of the *Epsom* Salt, second *Lemington* Salt, and second *Newcastle* Salt. There also appeared a little on the first *Lemington* Salt, but not on the rest.

A Solution of corrosive Sublimate was made in Water, ten Drops of which, mixed with the several Solutions, produced little or no Alteration; but upon dropping in the Oil of Tartar per Deliquium the following Appearances were produced: In the Solution of the *Epsom* Salt, second *Lemington* Salt, and second *Newcastle* Salt, the Precipitations were red; in the Solution of the common Salt, and first *Newcastle* Salt, the Precipitations were white; in the Solutions of the first *Lemington* Salt, the Particles precipitated approached pretty near the Colour of the three first.

I took some of these several Salts in Substance, and to each of them poured a little Oil of Vitriol, which is one of the Experiments Dr. Grew tried upon his Salt, and which he says causes a moderate Ebullition, whereby it appears to partake of an alkaline Principle: But without looking for this alkaline principle from its fermenting with an Acid, (Terms justly exploded by the learned Dr. Freind in his *Prælectiones Chymicæ*) I am inclined to believe, that the Salt in which he tried the Experiment had not, according to his own Directions, been thoroughly separated from his muriatic Salt. For this Oil poured on the *Epsom* Salt, second *Lemington* Salt, and second *Newcastle* Salt, produced no sensible Fermentation. On the Sea salt it acts with Violence, forcing off its acid Spirit with an insufferable Gas. The same Effect in Proportion it had on the first *Lemington* Salt; none at all on the *Sal Mirabile*, as being a Sea-salt already satiated with the Oil.

What I have all along called the third Salt, answers in most of these Experiments to the Sea-salt, and yet has some Properties exceedingly different from it; to those I have mentioned, these may be added; it will decrepitate like Sea-salt; it readily melts, when put in a Crucible in the Fire; and when calcined till red hot, affords a Calx equal to, if not stronger than, a Lime-stone, and ferments violently, as well with Water as with Oil of Vitriol. This Calx, when exposed to a moist Air, will Part of it run per Deliquium; but not so soon as before Calcination. All these Properties differ in every respect from the common Salt, and leave me still in doubt what to call it, as also how far Experiments of this kind may be deemed conclusive. By Mr. John Brown Chymist, in the *Philosophical Transactions abridg'd*, Vol. VIII. P. 730.

THE METHOD OF PRESCRIBING THE BITTER PURGING SALT.

It may be taken in any Liquor agreeable to the Patient's Constitution or Palate. I often use the following Method:

Take of Spring-Water, two Quarts; Mace, a Dram; boil them a little, and in the Liquor dissolve such a Quantity of the bitter Purging Salt, as may be agreeable to the Constitution and Disease of the Patient; for an Apozem, to be drank hot, warm, or sometimes cold, in the

Morning fasting, in the Space of two Hours, with a little Exercise. This Apozem may be either taken by itself, or in the Working of other Physic.

The Operation of the Salt may be quickened by the Addition of Sena and Manna in the following Manner:

Take two Quarts of Spring-Water; Mace, a Dram, *Alexandrian* Sena, two Drams or three; boil them a little; and then add an Ounce of the Salt; an Ounce and half or two Ounces of the best *Calabrian* Manna; and run the Liquor through a Sieve.

The Salt may also be safely taken thus:

Take three Pints and a half of Spring-Water; of the bitter purging Salt an Ounce, or ten Drams. Mix them, and when the Water boils, pour upon it half a Pint of new Milk, and strain the Liquor from the Curd.

The most proper Vehicle for this Salt in Summer is the *Tunbridge*, or any other chalybeate Water. For instance a Dram or a Dram and half of this Salt, taken in the first three or four Draughts of *Tunbridge* Water, and repeated for some Mornings, prepares the Humours, and clears the Way for the intended Course. The chalybeate Waters do sometimes bind; which Inconvenience is remedied, by putting a little of this Salt into the first or last Glass.

Every Draught of the Purging Waters themselves may be, also, usefully impregnated with a Dram of the Purging Salt; three Drams or half an Ounce of which is also extremely proper for sharpening Clysters.

TO QUICKEN A DECAYED APPETITE.

Take a Flask of Spaw-Water, or a Quart or three Pints of any other chalybeate Water; or if not to be had, of maced Water; of the bitter Purging Salt, half an Ounce, six Drams, or an Ounce; mix and drink them fasting.

TO STAY VOMITINGS.

Take of any chalybeate Water, three Pints or two Quarts; or instead thereof maced Water; of the bitter Purging Salt, six Drams, an Ounce, or ten Drams; mix them, and drink them fasting warm or cold. Repeat them thrice either every Day or every other Day.

IN THE PAIN OF THE STOMACH.

Take of the best Sena, two Drams; Mace, a Dram; boil them in a sufficient Quantity of Spring-Water, to three Pints or two Quarts; and to the strained Liquor, add six Drams, an Ounce, or ten Drams of the bitter purging Salt; of the Syrup of Steel, an Ounce and half; for a purging Apozem to be drank in the Morning after the usual Manner. Or it may be made without Sena.

IN THE HYPOCHONDRIACAL AFFECTION WITH HEAT.

Take of any chalybeate Water a Quart, three Pints, or two Quarts; dissolve in each Draught half a Dram, or a Dram of the bitter Purging Salt; drink it at seven or eight Draughts cold. Or instead of Chalybeate Waters, it may be taken in simple Milk-Water, or distilled from the Leaves of Borage and Burnet. The Salt may be, also, successively taken in this Manner for the Heart-burn.

IN THE COLIC.

Take of Spring or River Water seasoned with Mace, three Pints and a half; Chamomile Flower Water, or Mint Water, six Ounces; the bitter Purging Salt, an Ounce or ten Drams; Manna, an Ounce and half or two Ounces. Mix them for an Apozem. Let the Patient take about half a Wine Pint at a Draught hot, and all of it in an Hour, or an Hour and half, altho' he should vomit some Part of it. A Spoonful or two of the *Tinctura Sacra* may be taken before every Draught of the Apozem.

IN THE WORMS.

Mix a Dram or a Dram and half of the Salt with any Food commonly made for Children, without Milk.

IN NEPHRITIC PAINS.

Take of Chamomile Flowers, a Handful; Cumine Seeds, sweet Fenil Seeds, and Parsley Seeds, all bruised, of each an Ounce; Marsh-mallow Root sliced and bruised, two Ounces: Boil them in a sufficient Quantity of fair Water. To the strained Liquor add half an Ounce of Turpentine, dissolved in the Yolk of an Egg; of the bitter Purging Salt, half an Ounce; and Syrup of Marsh-mallows, three Ounces; mix them for a Clyster. If the Pains are very great, add to the Clyster forty or fifty Drops of cydoniated Liquid Laudanum.

If the Pains still continue, Recourse must be had to the following Apozem:

Take of the Decoction of Pearl Barley, seasoned with Mace, three Pints, or two Quarts; six Drams, or an Ounce, of the bitter Purging Salt; Syrup of Marsh-Mallows, three or four Ounces: Mix them for an Apozem, to be taken hot, in an Hour, an Hour and half, or two Hours, although the Patient should vomit Part of it.

This Apozem may also be used successfully in an ISCHURY or HEAT OF URINE.

IN A DIABETES.

By this Salt, or the Waters, in conjunction with the constant Use of Chalybeate Waters, and Hypnotics, I have restored some, but indeed young Patients to perfect Health.

IN THE JAUNDICE.

In any Sort of Jaundice, with or without Stones in the Gall, the Purging Water or its Salt is very properly given in the following or other like manner:

Take of Pilula Ruffi, half a Dram; Rhubarb, and volatile Salt of Urine, each half a Scruple; Syrup of Wormwood enough to make them into six Pills to be taken going to Bed. In the Morning following let the Patient drink this Apozem.

Take two Ounces of the Shavings of Harts-Horn; boil them in three Quarts of Spring-Water, to two: Then add Mace and Turmeric, each a Dram; and having boiled them a little, dissolve in the strained Liquor the bitter Purging Salt, and Syrup of Steel, of each an Ounce; for an Apozem to be drank as usually.

IN MADNESS.

To quicken the Operation of purging Medicines, use the following Apozem:

Take of the Leaves of Baum and Borage, each a Handful; infuse them in two Quarts or five Pints of boiled Spring-Water while it is hot, and let them stand in a Vessel well covered for half an Hour. Add to the strained Infusion an Ounce or ten Drams of the bitter Purging Salt; of the Syrup of Violets, three Ounces. Mix them for an Apozem to be drank by itself, or with any convenient Purge instead of Posset-Drink. Or,

Take an Ounce of the bitter Purging Salt; dissolve a Dram in a Draught of any chalybeate Water, and let the Patient drink eight such Draughts.

The same Water or Salt may also be taken usefully in the Intervals of other Purgations.

IN THE HEAD-ACH.

After Bleeding, and (if necessary) Vomiting, exhibit the following Medicines:

Take prepared Scammony, powdered Rhubarb, and Mercurious Dulcis, of each ten, twelve, or fourteen Grains; Syrup of Buck-Thorn, enough to make them into five Pills, to be taken at four or five o'Clock in the Morning, and let the Patient sleep upon it. After three Hours let him drink this Apozem.

Take of Spring-Water seasoned with Mace, three Pints or two Quarts; of the bitter Purging Salts, six Drams

or an Ounce; Syrup of Violets, two Ounces. Mix and let the Patient take them by convenient Draughts, being kept warm in the Working.

Let the Pills and Apozem be repeated every third and fourth Day, and the Apozem by itself on the intervening Days, continuing this Course, if necessary, for a Fortnight or three Weeks.

IN THE MEGRIM.

With other proper Remedies, use the following:

Take of Pilula Mastichina, two Scruples; Chymical Oil of Marjoram five Drops: Mix and take them going to Bed. Next Morning drink this Apozem.

Take of Spring-Water seasoned with Mace, a Quart, or three Pints; the Water of Sage of Virtue, four Ounces; sweet Marjoram Water, two Ounces; the bitter Purging Salt, six Drams; mix and take them in the usual manner.

IN FITS OF THE MOTHER.

If a temperate Purge be necessary, use the Purging Salt dissolved in Spaw-Water, or that of Baum.

IN THE WANDERING GOUT.

The Purging Waters or their Salt may be taken, with other proper Remedies, in the following manner.

Take of the Powder of resinous Jalap, half a Dram; of prepared Scammony, six Grains; Calomel, half a Scruple; Syrup of Buck-Thorn, enough to make a Bolus, to be taken at five in the Morning, the Patient sleeping upon it. After three Hours let him drink this Apozem.

Take of Pearl-Barley, an Ounce and half; Currants, three Ounces; boil them in Spring-Water, to two Pints and a half; adding, towards the End of the Boiling, half a Dram of Mace; in the strained Liquor, dissolve an Ounce of the bitter Purging Salt, and half an Ounce, an Ounce, or an Ounce and half of the best Manna, for an Apozem.

If the Patient is not easily wrought upon, let him take six Drams, or an Ounce of the Syrup of Buck-Thorn in the first Draught: And let the Bolus be repeated with this or the like Apozem, every other, or third, or fourth Day.

This Apozem is also excellent in some Sorts of Itch, not that which is contagious, but in that which proceeds from the Scurvy. It is likewise beneficial after the Small-Pox is shelled off, and with most Purges in the Room of Posset-Drink.

Those who on a long Journey, especially in Summer, are usually collicive, by two or three Drams of this Salt taken in a Draught or two of Spring-Water, will hereby keep themselves soluble and very cool.

DISEASES IN WHICH THE BITTER WATERS AND THEIR SALTS MAY BE PREJUDICIAL.

In all Dropsies; in a continual Fever; in an Ague; the Green-Sickness; Spitting of Blood; Cholera Morbus; and the Palsy. Nor are they to be allowed to Women with Child, without great Circumspection.

They may also prove hurtful in a Suppression of Urine, which depends upon an Ulcer in the Bladder, or a Stone too big to pass; in either of which Cases the Patient is to abstain from all Diuretics. But otherwise I have often given this Medicine successfully; that is to say, in bringing away the Urine, and Stones with it not of the least Size. *Grew on the Bitter Purging Salt.*

SAL CATHARTICUS HISPANICUS.

This is a Salt produced near *Madrid* from the Waters of a certain Spring, which spontaneously form themselves in Crystals. It is a Salt of the neutral Kind, and in Properties exactly agrees with *Glauber's* Salt, and 'tis even observed to purge more gently, surely and copiously than *Epsom* Salt. *M. Bartlett. Mem. del Acad. Royal, An. 1724.*

SAL SEDATIVUM, Sedative Salt.

This Salt invented by Mr. *Hornberg* is a perfect *Sal Salsum*, which arises in the Form of Flowers, or a Kind of white, light, dry Species of Meal, in the Distillation of a Solution of Borax and Oil of Vitriol, which contains a very strong Acid. It neither alters the Colour of the Juice of Violets, nor acts sensibly on the Solution of corrosive Sublimate, nor upon the Solution

Solution of Mercury by the Spirit of Nitre; it is a Salt very useful in Medicine, tho' it is only sedative, that is, tho' it only alleviates the violent Paroxysms of Fevers for six or seven Hours, during which Time the Physician may prescribe more efficacious Medicines, which could not have been otherwise used. *Hist. de l'Acad. Royal; An. 1732.*

SAL POLYCHRESTUM DE SEIGNETTE. This Salt, which has been used in Medicine for many Years, takes its Name from Mr. *Seignette* a Physician of *Rochelle*, who invented it, and during his Life kept it a Secret, which he only transmitted to his Children, who in their Turn kept the Secret so inviolably that no Chymists have hitherto been able certainly to discover the Mystery, some taking it for one, and some for another Thing.

The great Reputation of this Medicine, from its first Discovery to our present Times, induced Mr. *Boulduc* to attempt a Discovery of its Composition.

The first Experiment, says that Author, which I made with this Salt, was to put some of it upon a live Coal, upon which it became fused, bubbled, yielded a Smoke, and at last left a Coal-like Matter. But among all these Effects, what most engrossed my Attention was the Smell exhaled from it, which could not well be mistaken by Chymists, since it was the same with that of Tartar, or Cream of Tartar, which do not differ from each other. I did not confine myself to the Fusion and boiling of this Salt upon the Coals, because these are Properties common to many Salts; but tasting the Coal which remained, after all the Smoke was evaporated, I found that it made nearly the same Impression on my Tongue with fixed and lixivial Salts.

These two Properties, the Smell of burnt Tartar, and the lixivial Taste, joined to its easy Solution in cold Water, made me at first suspect that it might possibly approach to the Nature of soluble Tartar. But not satisfied with this Proof, which to me appeared superficial, I proceeded to Distillation. Two Ounces therefore of this Salt, pushed by the Fire in a Retort, yielded a sufficiently clear Liquor, with a black Oil floating on its Surface. Upon examining both, I found the Liquor to be the Spirit of Tartar, and the Oil was what we call the empyreumatic or fetid Oil of Tartar. Then I distilled two Ounces of soluble Tartar, and the Produce was the same as in the preceding Distillation.

Hitherto I thought I had Reason to believe, that the Salt of Mr. *Seignette*, and soluble Tartar, were one and the same Thing, but at last some Circumstances made me suspect that they were different.

After the two Distillations now mentioned, I viewed the Residuum which to me appeared the same, since they were both a black, Coal-like, porous and rarified Matter, which I took for a calcined Tartar, and from which I could only obtain a fixed alkaline Salt. Accordingly, upon pouring Spirit of Nitre upon both, they both produced a Fermentation; however, the Residuum of the soluble Tartar apparently fermented much more briskly than that of Mr. *Seignette's* Salt, and carrying my Researches farther, I calcined both Residuums in an open Fire, and after having dissolved them in Water, and filtrated them, I found in the Residuum of the soluble Tartar, a Taste simply lixivial, and upon the Filtre a kind of Ashes. But the Lixivium of Mr. *Seignette's* Salt had some Smell resembling that of a rotten Egg; and when filtrated, had not the Colour of Water like that of the soluble Tartar, but a blueish Colour. Upon pouring distilled Vinegar upon this Solution, the Liquor became turbid, and after some Time, precipitated a white and apparently sulphureous Matter.

But after all these Experiments, there was nothing certain to distinguish Mr. *Seignette's* Salt from the common soluble Tartar; and tho' I have had frequent Opportunities of conversing with the two Mr. *Groffroy*s, who frankly communicated their Sentiments on this Subject to me, I confess I always remained uncertain as to the Matter of which this Salt consisted, and for ought I know, might have done so all my Life, if my Friend Mr. *Groffe* had not one Day opened my Eyes, by communicating to me what he had observed in making Experiments on the Salt of Kali; for he shewed me a Salt which gradually separated or subsided from a Solution of that Substance, and which, tho' in Figure it resembled *Glauber's* Salt, yet it fermented with all Acids, and especially very briskly with mineral Acids, but more slowly with vegetable Acids, such as Lemon Juice, Vinegar, and some others, and most faintly of all with Cream of Tartar. But however slow its Dissolution with Cream of Tartar when cold was, yet it was in process of Time perfectly dissolved; and Mr. *Groffe* added, that this Mixture deserved to be examined by Evaporation and Crystallization.

I immediately laid hold of this Hint, and imagined that this Mixture would afford a new Species of neutral Salt, or soluble Tartar; and from that Time forth, I suspected that Mr.

Seignette endeavouring to make a new Cream of Tartar, which, as is well known, is nothing else but Tartar rendered soluble by the fixed Alkaline Salt of the same Tartar, might have believed, with some other modern Chymists, that all alkaline Salts obtained from Plants by Calcination, are the same, and that the Fire leaves no essential Part of the Plant from which they are obtained; that consequently one might be indifferently substituted for another, and at last, that according to this Principle, having easy Access to the Salt of Kali, he could of it make his soluble Tartar; and that upon executing this Design, he had obtained from it a Salt, which was not found to be precisely the common soluble Tartar, known for so long a Time, but a new Salt, or rather a new Species of soluble Cream of Tartar, to which he afterwards gave the pompous Epithet of *Polychrest*, on account of the many good Effects it produced.

In this Opinion I remained for a long Time, without making any Trial whether it was really so or not, tho' I had frequently communicated my Sentiments to several Chymists upon this Subject.

But at last I resolved to put the Design in Execution, which Mr. *Geoffroy* did at the same Time; and tho' none of us knew that the other was engaged in this Task, yet we both found precisely the same Thing.

In order to make Mr. *Seignette's* Salt, we take the Salt of the best calcin'd, whitest and hardest *Alicant* Kali, reduced to a Powder; of this we make a strong Lixivium by boiling in Water, and filtrate the Lixivium, which is very transparent.

Then we take separately some Cream of Tartar in Powder, upon which we pour this Lixivium, when warm. This Mixture excites a Fermentation, which lasts for a considerable Time, and which even after it has ceased, is renewed at certain Intervals. In the Time of this Fermentation, the Cream of Tartar is resolved; after which there is a copious Precipitation of a spongy and light Earth, which is to be separated from the Liquor by Filtration. Then we evaporate this Mixture to the Consumption of about a third Part. Then it is to be left at rest in earthen Vessels, by which Means, after some Days we find Crystals transparent like Crystal, which when disengaged, and not supported by the Vessels, are formed into Cylinders or Columns, which through all their Length have many flat Surfaces, above nine of which I have sometimes counted, tho' they are not generally found in so great a Number.

In my Opinion, it is impossible exactly to determine the precise Proportion of the Salt of Kali, and the Cream of Tartar, since some Kinds of Kali contain a larger Quantity of Salt than others. But the most natural Way of finding this Proportion, is to dissolve in the Lixivium as much Cream of Tartar as it will receive, that is, to the Point of Saturation.

A Lixivium of six Pounds of Kali generally absorbs two Pounds and three or four Ounces of Cream of Tartar, and when the Kali is very white and richly impregnated with Salt, the Lixivium of six Pounds some times absorbs an equal Weight of Cream of Tartar. This Difference, as we may easily conceive, can only depend upon the Quality of the Kali, according as it is more or less impregnated with alkaline Salt.

But when I took the Salt which subsided in the Solution or Lixivium of Kali, and the Configuration of which nearly resembles that of *Glauber's* Salt, half a Pound of this Salt dissolved, easily received thirteen or fourteen Ounces of Cream of Tartar, and the Mixture precipitated scarcely any Earth. This is the justest Proportion I can propose for the Substances which enter the Composition of Mr. *Seignette's* Sal Polychrestum. If we only wait for a short Time, we have the Crystals of Kali, after which the Mixture is more equally made, and is not subject to the Precipitation of the different heterogeneous Substances which the Kali communicates to the Lixivium.

In a Word, my Salt when formed into Crystals, and compared with that of Mr. *Seignette* also crystallized, was found to be precisely the same in all Circumstances; for they are figured like each other, are easily dissolved in cold Water, when reduced to a Powder, have the same Taste, and communicate a certain Coldness to the Tongue. When put upon a live Coal, they become fused and bubble, yield the Smell of burnt Tartar, and are at last reduced to a black and spongy Coal, which yields Tartar.

If after this Examination, we should doubt of the Conformity of this Salt with Mr. *Seignette's*, we may be convinced of it by an Experiment, which makes a speedy Decomposition of it: For if we dissolve equal Quantities of both Salts separately in warm Water, and pour into each Solution Oil of white Vitriol, till its Action ceases, in Proportion as these Solutions become cold, a saline Concretion is formed, which when examined, is found to be true Cream of Tartar, in Crystals regenerated or separated from the Alkali, whilst the Oil

Oil of Vitriol is united with it, and afterwards by Crystallization, forms with it a *Glauber's Salt*, in the same Manner as if this Oil had been poured upon the Lixivium of the Kali.

Mr. *Seignette's* Sal Polychristum is therefore a Cream of Tartar rendered soluble by the Alkali of Kali. *Mem. de l'Acad. Royal des Sciences, An. 1731.*

SAL CORALLII. Salt of Coral. See CORALLIUM.

SAL CORUM CERVI. Salt of Hartshorn.

SAL EX DUOBUS. A Name for the ARCANUM DUPLICATUM, which see.

SAL EBSHAMENSE. See SAL CATHARTICUM AMARUM.

SAL ENIXUM PARACELSI. See ENIXA.

SAL ESSENTIALE. An Essential Salt. See ACETOSA.

SAL FIXUM. A fixed Salt. See ALCALI.

SAL FLUOR. An acid Salt in a liquid Form, before it is fixed by uniting with a terrestrial Substance. *Lemery's Pharm. Univers.*

SAL FOSSILE. Sal Gemmæ.

SAL GEMMÆ. See SAL ALIMENTARIS.

SAL INDICUM. Sugar. See SACCHARUM.

SAL JOVIS. Salt of Tin. See JUPITER.

SAL LIXIVOSUM. A lixivial Salt. See ALCALI.

SAL MARINUM. Sea Salt. See SAL ALIMENTARIS.

SAL MARTIS. Salt of Iron. See MARS.

SAL MEDIUM. A Neutral Salt.

SAL MERCURIALE. *Hartman* informs us, that this imports *Sal Ammoniac*. But some call Mercury Sublimate by this Name.

SAL MIRABILE GLAUBERI. *Glauber's Salt*. See SAL ALIMENTARIS.

SAL NEUTRUM. A Neutral Salt. See NEUTER.

SAL NITRI. Nitre. See NITRUM.

SAL POLYCHRESTON. See NITRUM.

SAL PRUNELLÆ. See NITRUM.

SAL SUCCINI. See AMBRA.

SAL SULPHURIS. Salt of Sulphur.

Take of Sal Polychrestum, four Ounces, powder it in a Glass Mortar, with a Pestle of the same; put it into a flat wide-mouth'd Glass, and add to it of the Spirit of Sulphur two Ounces, stir them well together, and evaporate in a Sand Heat, which will leave a pleasant acid Salt, which put up in a Vial for Use.

This is not, strictly speaking, the Salt of Sulphur, but Nitre fixed by Sulphur, and afterwards impregnated with its Spirit. It is diuretic, and if given in a large Dose, cathartic, as most Salts. In the former Intention it is given from ten Grains to one Dram, in the latter up to four Drams, dissolved in Broth, or any proper Vehicle warm.

SAL TARTARI. Salt of Tartar.

SAL THERIACALE.

The Ancients made Use of a Compound, which they call Salt of Vipers, or *Sal Theriacale*.

Dioscorides describes it, as made by burning a Viper in a new earthen Pot, with some Figs, common Salt and Honey, and when it was reduced to Ashes, adding a little *Spica Nardi* or *Malabathrum*. *Pliny* adds nothing to the Viper, but the Juice of Fennel, and a Grain of Incense. But *Galen*, *Panlus* and *Aetius* describe a much more compound *Sal Theriacale*. *Le Clerc*.

SAL VITRI. Salt of Glass, or Sandiver. See AXUNGIA VITRI.

SAL VOLATILE. A Volatile Salt. See AMMONIACUM, and ALCALI.

SAL VOLATILE OLEOSUM. See AMMONIACUM.

SAL URINOSUM. A Urinous Salt; that is, a volatile Salt, which rises in the Distillation of Animals, and Vegetables, and smells somewhat like Urine.

Besides the Salts above taken notice of, there are some very curious Salts mentioned in the Memoirs of the Royal Academy of Sciences; as the Salt of *Dauphiny*; the *Spanish* Salt; and the sedative Salt.

SALT OF DAUPHINY.

This Salt was first of all accidentally discovered near *Grenoble*, the Capital of *Dauphiny*, by some Miners, who searching in some of the old metallic Mines, which as yet remain'd open, mistook what they sought for, but in its stead found an Earth impregnated with small shining Substances, which some of them knew to be of a saline Kind. Thus imagining that they had found an Earth abounding with Salt Petre, they made a strong Lixivium of it, and perceived, in the Evaporation of this Lixivium, Crystals, which bore some, tho' a very imperfect, Resemblance to those of Salt Petre.

But tho' the Crystals of this Salt had borne a greater Resemblance to those of Salt Petre than they did, it does not hence follow, that the former ought to be taken for the latter, if the other specific and distinguishing Properties of Salt Petre

were wanting; since the Configuration alone of any Salt does by no means ascertain its Essence or Characters.

But in order the more effectually to discover what this Salt is, we shall consider its external Properties, and the Principles or Elements of which it is composed.

This Salt then generally comes from *Dauphiny* in large Lumps, the inferior Part of which is about an Inch in Circumference, irregular, white, opaque, and pretty firm; whereas the superior Part, which is about two or three Inches in Circumference, represents a Cluster of small, transparent, and shining Crystals, some of which are disposed in flat Laminæ: But the greater Part are formed into oblong Squares, tho' so much interfering with each other, that they seem to have been prevented in the Configuration to which they had a natural Tendency; for there are very few of them which form small Columns perfectly, consisting of four Sides.

This Irregularity and Confusion is the Effect of too precipitate an Evaporation and Crystallization. But this Salt, in whatever State and Condition, is easily dissolved in about an equal Quantity of common Water, is friable, and becomes tarnished by Heat, and in process of Time by the Influence of the Air. It is easily melted on a live Coal, but does not become fused and take Flame like Salt Petre; for it only bubbles by means of the Water it contains, which being dissipated by the Heat of the Fire, it is transformed into a saline Calx. This Salt, when tasted first, conveys a sensible Bitterness to the Tongue, which is soon succeeded by a Sensation of Cold.

By these Marks and Properties, tho' only external, we generally use to judge of the *Sal Mirabile Glauberi*, similar to which is the Salt of *Dauphiny*, since it is possessed of the same Qualities. But that the Analogy, or rather Identity, of these two Salts may be the more effectually evinced, we shall enquire into their constituent and component Principles.

With respect, therefore, to artificial *Glauber's Salt*, we certainly know that it consists of a saline and an earthy Principle; the former is a fixed vitriolic Acid; and the latter, an Earth of Sea-Salt with which the Acid mixes and incorporates itself; so that the Salt of *Dauphiny* must have the same two Principles, in order to be entirely similar to that of *Glauber*.

Tho' it would be sufficient to prove the saline Principle of the Salt of *Dauphiny*, and deduce the other from it as a just Consequence, since we are convinced that a vitriolic Acid can with no known Substance, except the Basis of common Salt, form a Salt of the same Configuration and Properties which *Glauber's Salt* ought to be possessed of, yet I shall not entirely overlook the second or earthy Principle of the Salt of *Dauphiny*.

In order, therefore, to prove the true Principle of the Salt of *Dauphiny*, 'tis needless to observe, that by means of inflammable Substances, it is easily converted into a Liver of Sulphur, which in this Change can be nothing but a vitriolic Acid. Nor shall I insist upon the Precipitations which it produces of Lead dissolved in Aqua Fortis, or of Sugar of Lead dissolved in Vinegar. I shall only confine myself to its Effects with Quick-Silver; and upon one Experiment made for this Purpose build another, in order to prove its earthy Principle.

I therefore dissolve an Ounce of Quick-Silver in an equal Quantity, or a little more, of good Spirit of Nitre: I pour this Solution into five Ounces of the Salt of *Dauphiny*, dissolved in common Water. Upon which the vitriolic Acid, contained in the Salt of *Dauphiny*, immediately abandons its earthy Basis to the Spirit of Nitre, from which, as being the stronger of the two, it separates the Quick-Silver; and after having intimately united itself with it, they both subside to the Bottom of the Vessel, in a yellow Powder like Turbith Mineral, which is commonly prepared with Quick-Silver and Oil of Vitriol.

After having removed this yellow Powder, which is really a Turbith Mineral, as we shall afterwards shew; and having washed and dried it, I mix an Ounce of it with two Ounces of well-dried Sea-Salt. This Mixture I push in a Sand-Heat, in a Vessel whose superior Part is very convex; upon which a new Scene appears, for the Acid of the Sea-Salt proves superior, and in its Turn separates the Quick-Silver from the vitriolic Acid concentrated in the Turbith, and rising together to the Top of the Vessel, they form a kind of sublimate Mercury; whilst the vitriolic Acid finding an Earth like that which it had abandoned to the Spirit of Nitre, and which in this Case is the Earth left by the Acid of the Sea-Salt, it joins itself to it, and remains with it at the Bottom of the Vessel, in the Form of a saline Powder; which, when dissolved in Water, regenerates a Salt perfectly similar to that which I had employed to precipitate the Mercury, having the same Configuration of Crystals, the same Properties, the same Principles; and, in a word, the genuine Characteristic of *Glauber's Salt*.

Those who are ignorant of Chymistry may possibly be surprized

prized at the different Changes which happen in these two Experiments: For in the former, which is the Mixture of the Salt of *Dauphiny*, with a Solution of Mercury, the vitriolic Acid contained in this Salt, enjoys its full Force. "For, almost on all Occasions, it is superior to other Acids; and according to particular Occurrences, separates from them the Salts and Earths they contain. It, also, so, separates from them their metallic Substances, as it does in this Case with respect to the Mercury, which the Spirit of Nitre had dissolved. It also forces this Acid to yield to it, and is afterwards precipitated with it into a Turbith Mineral." But a Circumstance apparently small produces a very considerable Change in the second Experiment, which is the Mixture of this Turbith with Sea-Salt. Chymistry, as well as other Arts, has Exceptions from its general Rules, one of which occurs in this Experiment, which is, "That every time that certain metallic Substances are dissolved by any Acid, in which there is Sea-Salt, or its Principle, or if these are added to the Acids, they deprive them of their metallic Substances, because they have more Analogy with these than with the other Parts of such Acids. Perhaps this Analogy or Relation depends on the mercurial Nature of these metallic Substances." This Effect is, however, produced by the saline Principle of this Salt upon the Mercury; for it separates it from the vitriolic Acid, which kept it confined in the Turbith, and raises it along with itself into a Sublimate, leaving its Earth behind it, which Effect was in its Turn produced by the vitriolic Acid.

By these two Experiments the constituent Principles of the Salt of *Dauphiny* are rendered conspicuous: For it quickly precipitates Mercury into a Turbith Mineral, which can only be done by a vitriolic Acid. This Salt has, therefore, such an Acid for its saline Principle.

The Salt of *Dauphiny* must, also, for its other Principle, have the Earth of Sea-Salt: Because, as we have already observed, the vitriolic Acid cannot, without the Concurrence of that Substance, form a Salt possessed of such Properties, and such a Configuration of Crystals, as those of the Salt of *Dauphiny*, and which it has in common with the Salt of *Glauber*. This is confirmed by the second Experiment, where the vitriolic Acid of the Salt of *Dauphiny*, which was added to the Mercury, finding in the Sea-Salt an Earth similar to that which it had abandoned to the Spirit of Nitre, again forms with it a Salt crystalized in the same manner, and possessed of the same Properties with the first I employed.

Thus the Salt of *Dauphiny* has the same Principles with *Glauber's* Salt, and is for that Reason a genuine *Glauber's* Salt of the natural Kind, because Art contributes nothing to its Production; so that 'tis to be hoped a due Regard will in process of time be paid to this Salt, since it produces the same Effects on the human Body with a true *Glauber's* Salt, and is perfectly possessed of all its Characteristics; which are, That it does not become moist in the Air; does not alter the Tincture of Tournsol and Flowers of Violets; and that itself is not altered by the Oil of Vitriol, like other Salts, which still retain some Portion of Sea-Salt. *Mem. del Acad. Royale des Sciences, An. 1727.*

1. SALAMANDRA Offic. Schrod. 5. 345. Aldrov. de Quad. Ovip. 639. Schw. Rept. 163. Gefn. de Quad. Ovip. 80. *Salamandra terrestris*, Raii Synop. A. 273. Jonf. de Quad. 137. *Salamandra terrestris maculis luteis distincta*, Charlt. Exer. 28. THE SALAMANDER, or QUENCH-FIRE.

The Salamander is a Species of Lizard, of a black Colour, mark'd with yellow Spots. Its Head and Belly are thicker than those of the common green Lizard, but its Tail is shorter. It has a sharp Snout and full Eyes. Each of its Feet is armed with four pretty big Claws, but it is much slower in its Pace than the common Lizard. On its Back is a Figure much resembling that of a Cross, and it is mark'd with two Lines, which reach from the Neck to the Tail. There are two kinds of Salamanders, the terrestrial and the aquatic; the first is found in cold and moist Places, the other delights in Fountains and running Streams.

Salamanders are found in *Italy*, *Germany*, and in *Normandy*. It was formerly believed, that they could live in the Fire, because it was observed that they remained a longer Time in the Fire, without being consumed, than other Animals; because they are full of a lacteous and viscid Humour, which for some time diminishes the Heat of the burning Coals, but at length the Fire penetrates and burns them. The Bite of this Reptile is esteemed as dangerous as that of a Serpent. In Biting it discharges a lacteous, virulent, and very acrimonious Juico. It contains a good Quantity of caustic volatile Salt, Oil and Phlegm.

The Salamander is corrosive, burning and depilatory, being

outwardly applied. It can hardly be touched without hurting the Fingers. *Lemery des Draguez.*

The Ashes of a Salamander are an excellent and effectual Cure for scrophulous Ulcers, being sprinkled on the Parts affected. *Schroder.*

2. SALAMANDRA AQUATICA. This is distinguished in the following manner:

Lacertus aquaticus, Offic. Schrod. 5. 343. *Lacertus aquaticus niger*; Mer. Pin. 169. *Salamandra aquatica*, Raii Synop. A. 273. Charlt. Exer. 28. Rondel. de Aquat. 2. 230. *Salamandra aquatica, aliis Lacertus aquaticus*, Jonf. de Quad. 137. *Scincus aquaticus quibusdam*. THE WATER EFT.

It is found in Fish-Ponds and standing Waters. The Powder of it is commended for facilitating the Evulsion, or Drawing the Teeth.

SALAPPA. Jalap.

SALCÆ OLEUM. Oil of *Salca*. The best Preparation of Oil of *Salca*, and as I prepared it in *Alexandria*, says *Aetius*, is in the following Manner:

Take of Aspalathus, half a Pound; of Xylobalsamum, nine Ounces; Cyperus, four Ounces; Elecampane, both Sorts of Iris, each half a Pound; Calamus Aromaticus, eighteen Ounces; Flowers of the Juncus Odoratus, two Ounces and half; of fat Storax two Ounces; two Indian Nuts; Malabathrum, eight Ounces; Spikenard, one Ounce; Cloves, Zedoary, each one Ounce and an half; Amomum, three Ounces; Cassia, two Ounces; Castus, one Ounce; Myrrh, one Ounce; Hypnum (a Species of Moss) Xylocasia, each three Ounces; Oil, ten Sextaries. Then boil together in the Oil the Xylobalsamum, Iris, Cyperus, Elecampane, and Xylocasia, decorticated, grossly pounded, and macerated two or three Days in Water; stir them continually, infilling Water by Degrees, when they begin to grow dry. When they have boiled three Hours or more, take them off, and let them stand covered for a whole Night. The next Day take them out, and separating the Water from the Oil, boil them again in pure Water mixed with a small Quantity of Wine; and as soon as they begin to boil up, put in the Calamus, the Flowers of the Juncus Odoratus, all first steeped in old scented Wine. The third Day take them out in like manner as before, and adding more Water, boil them a third Time, putting in the rest of the Ingredients as soon as they begin to boil. They make a secondary Sort, which is done by adding six Sextarii of Oil to what remains after the third; and after boiling it a sufficient time, adding three Ounces of good white Myrrha Staete; half a Pound of *Sirroma* [Water of Opobalsamum;] half a Pound of Mastich; and an Ounce of good Storax. Oil of *Salca* is used by the Women to anoint their Heads, and what I have here given is by far the best Way of preparing it. *Aetius, Tetrab. 1. Serm. 1.*

Another Preparation of Oil of *Salca*.

Take of Oleum Omphacinum, twenty Sextarii; Iris Illyrica, one Pound; Amomum, one Ounce and an half; Aspalathus, Hypnum, each one Pound; Calamus Aromaticus, two Pounds; Cloves, Malabathrum, Carpopalsamum, each one Pound; Xylocasia, five Ounces; Cassia, four Ounces; Costus, fat Storax, Saffron, each one Ounce; Myrrh, Zedoary, each three Ounces; Spikenard, four Ounces. Boil them all in Water, and manage them as it is directed in the former Preparation. *Aetius, Tetrab. 4. Serm. 4. Cap. 114.*

SALEFUR. Garden-Saffron. *Rulandus*.

SALEP. See ORCHIS.

SALICARIA.

The Characters are;

The Calyx is tubulous, striated, and multifid; the Flowers are rosaceous, hexapetalous, and grow out of the upper Infundibula on the Inside of the tubulated Calyx, almost in a Series of Whorls, and are furnished with a Multitude of Stamina, sometimes no fewer than eighteen. The Ovary, which is adorned with a long Tube, that has an Apex shaped like a Bason, when ripe becomes an ovated, bicapsular Shell involved in the Calyx, and full of small Seeds.

Boerhaave mentions four Sorts of *Salicaria*, which are;

1. *Salicaria*; vulgaris; purpurea; foliis oblongis. *Tourn. Inst. 253. Boerb. Ind. A. 221. Raii Synop. 3. 367. Lyfimachia purpurea spicata*. Ger. 386. Emac. 476. Park. Theat. 546. Raii Hist. 2. 1036. *Lyfimachia spicata purpurea sorte Plinii*, C. B. P. 246. *Lyfimachia purpurea quibusdam spicata*, J. B. 2. 902. *Blattaria rubra spicata major, glabra, communis* [* S]

folio

folio acuto, Hist. Oxon. 2. 490. SPIKED WILLOW-HERB.

It grows in marshy Places, and by the Banks of Rivers, and flowers in July. The Herb, which is used in Medicine, is an Ophthalmic. *Mont.* The distilled Water is a present Remedy for Wounds, Punctures and Sugillations of the Eyes, as well as Dimness of Sight and all other Infirmities incident to those Parts. *Park.* It is a Specific in Inflammations. *Raii Hist.* The Decoction of the Herb is an excellent Remedy for the epidemic Diarrhoea of Ireland. *Threk. Synop. Hib.*

2. *Salicaria*; *purpurea*; *foliis subrotundis*. T. 253. *Lyfimachia*, *spicata*, *lanuginosa*, *folio subrotundo*, *flore purpureo*. H. R. Par. *Blattaria*, *rubra*, *spicata*, *major*, *lanuginosa*, *folio subrotundo*. M. H. 2. 490.

3. *Salicaria*; *Hyssopi folio*, *latiore*. T. 253. *Lyfimachia* *spicata*, *purpurea* *affinis*, *hyssopifolia*. H. L. 397. *Hyssopifolia*, *major*, *latisioribus foliis*, C. B. P. 218. *Hyssopifolia*, *aquatica*, J. B. 3. 792.

4. *Salicaria*; *Hyssopifolia*; *angustiore*. T. 253. *Hyssopifolia*, *minor*, *angustioribus foliis*. C. B. P. 218. M. H. 3. 613. *Boerb. Ind. Alt. Plant. Vol. 1.*

There has been no Virtue observed to belong to this Plant, tho' it be the *Lyfimachia* of *Discorides*, and it only serves as an Ornament in Gardens, on account of its beautiful Flowers. *Hist. Plant. Ascript. Boerhaave*, p. 299.

SALICORNIA.

The Characters are ;

It is aphyllous, smooth, succulent, and has the Appearance of Houseleek, consisting of Scales articulated box-wise. The Flower is apetalous, naked, and grows out of the Commissures of the Scales. The Fruit is a Vesicle containing one Seed.

Boerhaave mentions but one Sort of *Salicornia*, which is, *Salicornia* *Dod.* p. 82. *Salicornia*, *geniculata*, *annua*. T. Cor. 51. *Kali*, *geniculatum*, *majus*. C. B. P. 289. M. H. 2. 611. *Cali*, *geniculatum*, *sive Salicornia*. J. B. 3. 704. *Boerb. Ind. Alt. Plant. Vol. 2.*

A Decoction of the Leaves is very opening, provokes Urine and the Menstrues, accelerates the Birth, expels the Fœtus and Secundines, and purges watry Humours, whence it is of Service in a Dropsy. Its Ashes are used in making Soap and Glass; and being infused in Water, cure the Itch and all cutaneous Diseases, the Parts affected being washed therewith. *Hist. Plant. Ascript. Boerhaave.*

SALIVA.

By *Saliva* we mean in general, that Fluid by which the Mouth and Tongue are continually moistened in their natural State. This Fluid is principally supplied by Glands, called for that Reason Salival Glands, of which they commonly reckon three Pairs, two Parotides, two Maxillares, and two Sublinguales. These are indeed the largest, and they furnish the greatest Quantities of Saliva; but there are a great Number of other lesser Glands of the same Kind, which may be reckoned Assistants or Substitutes to the former. All these may be determined salival Glands, and they may be enumerated in the following Manner :

Glandulæ Parotides.	Glandulæ Linguales.
Glandulæ Maxillares.	Amygdalæ.
Glandulæ Sublinguales.	Glandulæ Palatinæ.
Glandulæ Molares.	Glandulæ Uvulares.
Glandulæ Buccales.	Glandulæ Arytenoidæ.
Glandulæ Labiales.	Glandula Thyroidæa.

The Parotides are two large, whitish Glands, irregularly oblong and protuberant, situated on each Side, between the external Ear and the posterior or ascending Branch of the lower Jaw, and lying on some Part of the neighbouring Masseter Muscle. The superior Portion of this Gland lies before the cartilaginous Meatus of the Ear, and touches the Apophysis Zygomatica of the Os Temporis; and it is extended forwards and backwards under the Lobe of the Ear, as far as the Mastoid Apophysis.

From the anterior and superior Portion of this Gland, a white membranous Duct or Canal is produced by the Union of a great Number of small Tubes, representing so many Roots. This Duct runs obliquely forwards on the Outside of the Masseter, and then perforates the Buccinator from without inward, opposite to the Interstice between the second and third Dentes Molares, where the Hole or Orifice represents the Spout of an Fwer.

This Canal is named Ductus salivalis Stenonis, or Ductus Superior. It is about the twelfth Part of an Inch in Diameter, and in some Subjects is partly covered by small glandular Bodies, united with it in different Quantities. The Arteria and Vena Angularis run up over this Duct, and the Portio Dura of the Auditory Nerve runs through the Gland itself; and it also receives Filaments from the second vertebral Pair.

The maxillary Glands are smaller and rounder than the Parotides, and are situated each on the Inside of the Angle of the lower Jaw, near the Musculus Pterygoidæus Inferior. From the Inside, or that which is turned to the Musculus Hyo-glossus, each of them sends out a Duct in the same Manner as the Parotides, but it is smaller and longer, and goes by the Name of Ductus Salivalis *Whartoni*, or Ductus Inferior.

This Duct advances on the Side of the Musculus Genio-glossus, along the Inner Part and superior Edge of the Glandula sublingualis, to the Frenum of the Tongue, where it terminates by a small Orifice in form of a Papilla.

The Glandulæ Sublinguales are likewise two in Number, of the same Kind with the former, something oblong, and flattened like a blanched Almond. They are situated under the anterior Portion of the Tongue, one on each Side, near the lower Jaw, on the lateral Portions of the Musculi Mylo-Hyodæi, which sustain them. The two Extremities of each Gland are turned backward and forward, and the Edges obliquely inward and outward.

They are covered on the upper Side by a very thin Membrane, which is a Continuation of the Membrane that covers the under Side of the Tongue. They send out laterally several small short Ducts, which open near the Gums by the same Number of Orifices, all ranked in the same Line, at a small Distance from the Frenum, and a little more backward. In many Animals we find particular Ducts belonging to these Glands, like those of the Glandulæ Maxillares; but they are not to be found so distinctly in Men. The Musculi Genio-glossi lie between the two sublingual Glands, and also between the two maxillary Ducts.

The Molares are two Glands nearly of the same Kind with the former, each of them being situated between the Masseter and Buccinator; and in some Subjects they may easily be mistaken for two small Lumps of Fat. They send out small Ducts, which perforate the Buccinator, and open into the Cavity of the Mouth, almost over-against the last Dentes Molares; and from thence M. *Heister*, who first described them, called them Glandulæ Molares.

All the Inside of the Cheeks, near the Mouth, is full of small glandulous Bodies, called Glandulæ Buccales, which open by small Holes or Orifices through the inner Membrane of the Mouth. The Membrane which covers the Inside of the Lips, a Continuation of that on the Cheeks, is likewise perforated by a great Number of small Holes, which answer to the same Number of small Glands, called Glandulæ Labiales. The Glandulæ Linguales are those of the Foramen cæcum of the Basis of the Tongue.

The Glandulæ Palatinæ belong to the Arch and Septum of the Palate; the Glandulæ Arytenoidæ are described under the Article LARYNX. The uvular Glands are only a Continuation of the Membrane of the Palate, in form of a small Bunch of Grapes. We might likewise reckon among the salival Glands, those of the superior Portion of the Pharynx; and also the glandular Bodies of the Membrana Pituitaria of the Nares, and of the Sinuses that communicate with these.

The Amygdalæ are two glandular Bodies of a reddish Colour, lying in the Interstices between the two lateral half Arches of the Septum Palati, one on the right the other on the left Side of the Basis of the Tongue. Their Appearance is not unlike that of the Outside of an Almond Shell, both because their Surface is uneven, and because it is full of Holes big enough to admit the Head of a large Pin.

These Holes, which represent a Sieve or a Piece of Network, are continued to an irregular Sinus or Cavity within the Gland, filled commonly with a viscid Fluid, which comes from the Bottom of the Sinus, and is from thence gradually discharged through these Holes into the Throat. To see the true Structure of the Amygdalæ, they must be examined in clear Water, having first been washed in lukewarm Water, and handled very gently.

The Thyroide Gland is a large whitish Mass, which covers the anterior Convex Side of the Larynx. It seems, at first Sight, to be made up of two oblong glandular Portions, united by their inferior Extremities, below the Cricoid Cartilage, so as to resemble a Crescent, with the Cornua turned upward. It is of a moderate Thickness, and bent laterally like the Thyroide Cartilage from which its Name is taken. The two lateral Portions lie on the Musculi Thyro-Hyoidæi, and the Middle, or inferior Portion, on the Crico-Thyroidæi. The Thyro-Pharyngæi Inferiores send Fibres over this Gland, and they communicate on each Side by some such Fibres with the Sterno-Thyroidæi and Hyo-Thyroidæi.

This Gland seems to be of the same Kind with the other salival Glands, but it is more solid. Some Anatomists thought they had discovered the excretory Duct, but they mistook a Blood-Vessel for it. We sometimes meet with a Kind of glandular

glandular Rope, which runs before the Cartilago Thyroides, and disappears before the Basis of the Os Hyoides.

This glandular Rope goes out from the common Basis of the lateral Portions of the Thyroid Gland, and is lost between the Musculi Sterno-Hyoidæi, behind the Basis of the Os Hyoides, or between that Basis and the Epiglottis. There are likewise small Openings on the Side of the anterior Ligament of the Epiglottis, or that by which it is connected to the Basis of the Tongue. One of these Openings appears like a small Papilla; and this is the farthest that I have been able to trace the glandular Rope. *Winslow's Anatomy.*

The Saliva is a thin pellucid Humour, incapable of being concreted by the Fire, almost without Taste and Smell, and frothing much when shaken. It is an Humour of the glandular Kind, secreted from the pure arterial Blood: In hungry Persons it is fluid, acrid, and copiously discharged. And in those who have fasted long, it is highly acrid, penetrating and resolvent. In farinaceous and succulent Vegetables, it not only produces a Fermentation, but also augments one already begun. It is swallowed not only by Brutes, but also by human Creatures in a sound State, even when asleep. Too copious an Evacuation of it made voluntarily, produces Loss of Appetite, bad Digestion, and an Atrophy. It consists of a pretty large Quantity of Water and Spirits, and is, also, of a saponaceous Nature in consequence of a small Quantity of Oil and Salt it contains.

By Manducation, therefore, the Saliva is expressed and accurately mixed with the attenuated Food, which contributes, first, to the Assimilation of the Aliments to the Nature of the Body to be nourished; secondly, to the due Mixture of the oleous with the aqueous Parts; thirdly, to the Solution of the saline Parts; fourthly, to Fermentation; fifthly, to a Change of the Taste and Smell of the Aliments; sixthly, to an Augmentation of the intestine Motion; seventhly, to a momentaneous Relief from Hunger; and eighthly, an Application of the sapid Parts, tho' it is insipid itself.

The Saliva, therefore, which is in a curious and surprising Manner elaborated from the arterial Blood, and which, when discharged, is mixed with the Aliments, cannot on other Occasions be evacuated without bad Consequences; but after it is swallowed, has performed its Offices, and is corrected by a fresh Circulation, it assumes a better Quality, as is obvious from certain Disorders, the Remedies appropriated to their Cure, and their several Crises.

An excessive Evacuation of the Saliva disturbs the first, and consequently all the succeeding Concoctions; induces Thirst and Dryness of the Parts; generates black Bile, and forms a Tabes and Atrophy. If the Saliva is not at all secreted into the Mouth, or secreted in a smaller Quantity than usual, the Manducation, Taste, Deglutition and Digestion of the Aliments, are hindered, and the Patient's Thirst is augmented. *Boerhaave Institut.*

SALIVALES DUCTUS. The Salival Ducts. See SALIVA.

With respect to these Ducts, Mr. *Monro* gives the subsequent Case in the *Medical Essays*, Vol. 2.

Mr. *Ker* of *Frogton*, a young Gentleman of a delicate Constitution, and threatened with a Consumption from an Ulcer in his Lungs, was seized, after riding in a cold Night, with a very hard Tumour about the Middle of his left Cheek, which the Gentleman who attended him, endeavoured at first to resolve; but observing a Suppuration to come on, it was opened with a Lancet on the Inside, and afterwards an external Orifice was also made, and Escharotics were applied to waste down the hard Stool of the Tumor that still remained. When no more Hardness was felt, his Surgeon endeavoured to incise and cicatrize, but was disappointed by a constant plentiful Discharge of a thin clear Lymph. The Orifice was again enlarged, and it was dressed a considerable Time with Astringents and Dryers, in different Forms, but without any Success.

In September 1727, being accidentally in the Neighbourhood of *Kelso*, where Mr. *Ker* lived, I was sent for to advise with Dr. *Abernethy* and Dr. *Scot*, Physicians there, and with Mr. *Jamieson* Surgeon concerning his Cure. The external Orifice in his Cheek was as large as would have received the Point of my Thumb, and at the Bottom of it we could distinctly see some Part of the superior salivary Duct laid bare, with a Hole in the outer Side of it, large enough to allow the Button of a middle sized Probe to enter it; and when he moved his lower Jaw at our Desire, the Saliva ran out plentifully at that Orifice. When the Jaw was not moved, a very small Quantity of the Spittle oozed out; but in Time of Dinner, it made a Napkin, laid eight Fold over the Plaster that covered the Ulcer wet all through.

We agreed to make an artificial Opening for the Saliva into his Mouth, which I did in the following Manner; having

with two Fingers of one Hand stretched his Cheek outwards, I directed the Point of a large Shoe-maker's Awl, which I held in the other Hand, into the open Breach of the Duct, and thrust the Awl obliquely forwards, through the Cheek into the Mouth, betwixt my two Fingers; then drawing back the Awl, I passed an eyed flexible Probe, mounted with a small Cord of Silk, through the Passage made by the Awl, and brought it out between his Lips with my Fingers, leaving one half of the Cord hanging from the external Ulcer; then the Ends of the Seton being disengaged from the Probe, were tied loosely near the Angle of the Mouth; and his external Ulcer was dressed up with dry Lint kept on with a Plaster. He was desired to rinse that Side of his Mouth frequently with Brandy; and the Sides of the external Ulcer were kept from going out too fast, or turning callous, with the lunar Caustic. In less than three Weeks this Management had the desired Effect, of rendering the Passage in which the Cord was engaged, callous, (which the Looseness of the Cord, and the Want of Pain when it was drawn, plainly shewed;) when Mr. *Jamieson* took out the Cord, and healed the external Ulcer very soon. In a little Time I saw our Patient at *Edinburgh*, with a firm Cicatrice on the Part where the Sore had been.

This Operation is plainly directed by my Friend Mr. *Chefelden*, in these Words: "When this Duct is divided by an external Wound, the Saliva will flow out on the Cheek, unless a convenient Perforation be made into the Mouth, and then the external Wound may be healed." None, however, of the chirurgical Writers whom I have looked into, give any Instance of this Operation having been formerly performed.

THE EXTIRPATION OF THE SALIVAL GLANDS.

Though many Methods have been proposed for removing scirrhus and indurated Glands in other Parts of the Body, yet the Method of extirpating the parotid and maxillary Glands, which are sometimes exceedingly tumified, and are connected with the larger Branches of the carotid Artery, has not hitherto been mentioned. What has been hitherto advanced in particular Treatises and Theses, with regard to these Glands, relates very little to their Extirpation; an Operation which has been reckoned by some very pernicious and extremely dangerous.

Nor can I altogether discommend this Opinion; for the Branches of the carotid Arteries passing through these Glands, are so large, that when they are wounded, the Patient may bleed to Death, unless attended by a skilful Physician or Surgeon.

Tho' the Hemorrhage may, in this Operation, be very large, yet it does not follow, that it never can be stopped by a prudent Physician; for whom it is not sufficient that he can relieve the Patient in slight Disorders, but he must also make Experiments where the Case is doubtful, or in the Opinion of some, desperate. And I have often had Recourse to this Method of Extirpation, when these Glands have been violently swelled, and severely indurated, even approaching to a carcinomatous Nature, after they had been treated by other Physicians with Digestives, Corrosives, and other Medicines.

In performing this Operation, it is necessary to be provided with a good styptic Liquor, Linnen Rags, much scraped Lint, a Puff-ball, thick Compresses of different Sizes, and a Bandage about six Ells long. Then let the Patient be placed in a Seat with his Face towards the Light, having his Head and Hands secured by Assistants. The Operator must next open the Skin above the Tumor, with a longitudinal Incision, and carefully separate the scirrhus or indurated Gland from the contiguous Parts with the Knife, and at last from the Arteries with which it is connected. The Blood then rushes out so profusely, that near a Pound will be lost before the Operator can lay aside his Knife and take up the Dressings. He must therefore immediately dip a Ball of Linnen Rags in the styptic Liquor, and press it, also, upon the larger wounded Arteries. The Remainder of the Cavity of the Wound must be well filled with scraped Lint and dry Rags, and compressed with the Finger, then apply a large Piece of Puff-ball, with three or four thick Compresses; securing the whole with a proper Bandage. Thus, by Degrees, the Hemorrhage will be assuaged, especially if the Patient be laid upon the Bed, and the wounded Part compressed for three or four Hours, by the Hand of an Assistant. But it is necessary to observe, that if the Tumor be extremely large, it may more easily be extirpated by a crucial Incision. The Patient must then rest in Bed for the three or four following Days, without loosening the Bandage, to prevent a fresh Hemorrhage. That this Time is necessary, I not only know from the Nature of the Wound, but from Experience; for having performed the Operation on a Girl, she was impatient under the Stricture of the Dressings, which